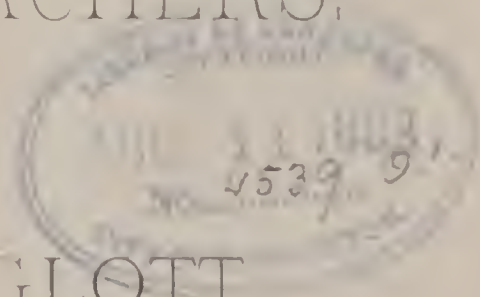


A MANUAL
OF
GEOGRAPHY;
CONTAINING A
COMPREHENSIVE EXPOSITION
OF THE
WHOLE SUBJECT, ADAPTED TO ANY SERIES OF
GEOGRAPHICAL TEXT-BOOKS,
FOR THE USE OF
PUPILS AND TEACHERS.

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BY
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ADA, OHIO:
AGNEW WELSH, PRINTER AND PUBLISHER.
1883.

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PREFACE.

THIS MANUAL has been prepared expressly for my own classes, but it has also been the aim to adapt it to the use of any class in advanced Geography.

No pains have been spared to make it accurate and complete so far as the limits of a text-book will allow.

In the experience of the past eight years in teaching this most useful and delightful subject, it has been found that the text-books now in use, are not adapted to the wants and demands of our classes, and in order to meet these requirements, I present this *Manual of Geography*.

All statistics, computations, and other matter in its preparation, are believed to be as recent and authentic as can be obtained. Absolute accuracy can not be attained in a work of this kind, covering so vast a field of knowledge, and in an age of such rapid scientific progress as this. The first pages of a book are often behind the times before the last pages are through the press.

It is not to be presumed that this Manual contains all that might be desired; occasionally something of importance may be omitted, but I content myself with the hope of making such changes and additions in the near future as may seem necessary.

In the contemplation of this work, the object was to make a revision of "The World as It Is and as It Has Been" or "Comprehensive Geography," an excellent work now out of print, but I found it necessary to add so much new matter and to make so many radical changes that but little of it could be used to advantage. The parts taken from it have in the main been altered so much that they could not be acknowledged by the usual symbols. The chapters on "Physical and Political Geography Compared," "Occupations," "View of the World" and "The Historical Sketches" have been taken with some changes. While the arrangement and language of this book is for the most part original, originality has not been aimed at so much as clearness and precision of statement. An old and well-tried definition has not been discarded for the sake of making one of my own. A number of tables, statistics, curiosities, reviews, exercises, etc., have been added which it is hoped will be found useful as well as interesting. The plans of using the book and methods of teaching are given at various points in its pages.

In conclusion, this *Manual of Geography* is submitted to you, my dear pupils and co-workers, with the hope that it will perform the mission of its

design, and stimulate and encourage you to still greater effort in the pursuit of knowledge, and that, in a measure, at least, it may lead us to a better appreciation of the Great Author, Designer and Giver of all.

TO THE PUBLIC into whose hands this volume may fall, I invite your careful examination. For any defects or errors which you may notice or suggestions you would make, I will feel myself under lasting obligations to you, if you will communicate the same to me. When so many books of excellent merit are in public use by public approval I can hardly excuse my own audacity in attempting what I have done; but being unable to find a text-book on Geography suited to the wants of our classes and to supply some of the defects in our class book on this subject, is my apology for publishing this Manual and placing it in the hands of my pupils. Its plans, methods, and preparation give the results of years of experience and patient toil, and if, in a measure, it meets with the success anticipated, I shall feel myself amply rewarded for my work, and so I send the book abroad satisfied with the hope that it will do at least, some good.

FREDERICK MAGLOTT.

North-Western Ohio Normal School, Ada, Ohio,

February 3rd, 1883.

A PARTIAL CLASSIFICATION.

I.—Definition and derivation of term.		I.—Principal.	
II.—Departments.	I.—Mathematical.	I.—Terms.	<ul style="list-style-type: none"> 1. Lines. <ul style="list-style-type: none"> 1. Straight. 2. Curved. 3. Broken. 2. Angles. <ul style="list-style-type: none"> 1. Kinds. 2. How measured. 3. Surfaces. <ul style="list-style-type: none"> 1. Plane. 2. Curved. 4. Solids. <ul style="list-style-type: none"> 1. Spheres. 2. Spheroids.
		II.—Scope: The earth mathematically considered.	<ul style="list-style-type: none"> 1. Form. 2. Measurement. <ul style="list-style-type: none"> 1. 2. 3. Motions. <ul style="list-style-type: none"> 1. 2. 4. Orbit. <ul style="list-style-type: none"> 1. Circles. 2. Points. 5. Surface. <ul style="list-style-type: none"> 3. Mode of Rep. 4. Divisions.
	II.—Physical.	1. The Earth Geologically Considered.	
		2. Land.	1. Composition.
		3. Water.	
II.—Departments.	II.—Physical.	4. Atmosphere.	<ul style="list-style-type: none"> 1. Land. 2. Systems. <ul style="list-style-type: none"> 1. Land. 2. Oceanic. 3. Atmospheric.
		5. Forms of Life.	
	II.—Political.	1. States of Soc'y.	<ul style="list-style-type: none"> Savage. Barbarous. Half Civilized. Civilized. Enlightened.
		2. Language.	
		3. Government.	<ul style="list-style-type: none"> 1. Object. <ul style="list-style-type: none"> 1. Monarchy. 2. Democracy. 3. Aristocracy. 2. Forms. 3. Dep'ts. 4. Origin.
		4. Religion.	
		5. History.	<ul style="list-style-type: none"> 1. Descriptive. 2. Philosophical.
III.—Leading Authors.	II.—Collateral.	1. Description.	
		2. Local.	
		3. Phenomenal.	
		4. Physiography.	
		5. Topography.	
IV.—Benefits derived from the study.	III.—Leading Authors.	1. Humboldt.	
		2. Ritter.	
		3. Guyot.	
		4. Johnston.	
		5. Maury.	
V.—History.	IV.—Benefits derived from the study.	6. Etc.	
		1. Scientific.	
		2. Intellectual.	
		3. Moral.	

GEOGRAPHY AND HISTORY,

ANCIENT AND MODERN.

CHAPTER I.—INTRODUCTION.

DEFINITIONS.

GEOGRAPHY AND HISTORY.

Geography is a description of the earth.

The name Geography is derived from the Greek words *ge*, the earth, and *grapho*, to write.

Geography includes *astronomy*, which teaches us that the earth is a planet revolving around the sun; it includes *geology*, which considers the formation and structure of the globe; it includes *ethnology* which treats of the natural races of men; it includes also, *botany*, *zoology*, *meteorology*, *history*, etc. There are but few branches of learning which are not kindred to it and do not grow out of a thorough study of the subject. It is the most comprehensive of all studies. But the special province of geography is to describe the surface of the earth, its distribution into land and water, and the various objects whether physical, moral, or political, which appear upon it.

The science of geography is divided into three divisions,—mathematical, physical and political.

1. MATHEMATICAL GEOGRAPHY treats of the earth as a planet, of its relations to the other heavenly bodies, of its motions and their effects, and of the representation of the earth's surface on maps and globes.

2. PHYSICAL GEOGRAPHY treats of the earth in its natural state.

3. PHENOMENAL GEOGRAPHY is a branch of Physical Geography and treats of the various phenomena of the earth.

4. POLITICAL GEOGRAPHY treats of the earth as divided by man and of the social condition of its inhabitants. This is also called *civil geography*.

5. PHYSIOGRAPHY is a description of the surface of the earth.

6. Minute geographical description of places is called *topography*.

7. All these different branches treated together, is called *descriptive geography*.

8. Local Geography is a description of a particular place on the earth's surface.

9. History is a record of past events. In its fullest extent, history means an account of past events with the causes which led to them, and the consequences to which they tend. It is thus divided into two parts, descriptive and philosophical. It embraces *chronology*, which is a record of dates at which great events have transpired; and *geography* which exhibits the scenes in which they have transpired.

CHAPTER II.

MATHEMATICAL GEOGRAPHY.

1. By the *universe* is meant the entire material creation.

2. The *heavenly bodies* are the stars, planets, comets, meteors, and nebulae. These all appear to be arranged into systems and groups, sweeping through unmeasurable space in circuits.

3. They may be classified into *luminous* and *opaque* or *non luminous bodies*. The *former* shine by their own light, as the sun and all other stars commonly called fixed stars. The *latter* shine by reflected light, as the planets.

4. The suns or stars are myriads in number and to the naked eye seem to be so near each other as to be almost matted together, yet astronomers tell us that the nearest are billions of miles apart. Light which travels at a rate of 185,000 miles a second, requires more than three years to pass from the earth to the nearest fixed star, while others are so remote that many thousands of years are consumed in this swift journey of light, to reach them. The mighty depths of space no man has ever fathomed.

5. A *planet* is a spherical body revolving around the sun and receiving light and heat from it. There are two classes of planets—primary and secondary.

6. A body revolving around the sun as a center, is called a *primary planet*. A body revolving around a primary planet, is called a *secondary planet*. The earth, which revolves around the sun, is called a primary; the moon, which revolves around the earth, is called a secondary.

7. The *secondary planets* revolve around the primary, the primary with their satellites revolve around the sun, the sun with all the planets and other suns with their attendants are supposed to revolve around a central sun, and this system of central suns, around a great central sun, and so on until, perhaps, we reach the great throne of God, about which all worlds and systems of worlds perform their cycles, though vast ages may roll away before one such may be completed.

8. There are about 200 planets, eight of these on account of their size are called major or principal planets; the rest minor planets.

9. The principal planets in their order from the sun, are as follows:—Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune. In order of their sizes they are:—Jupiter, Saturn, Neptune, Uranus, Earth, Venus, Mars, Mercury.

10. The following tabular statement will be found serviceable. The figures are only approximate so that they may be more easily retained the memory.

	MERCURY.	VENUS.	EARTH.	MARS.
Distance from the sun,	35,000,000	66,000,000	91,500,000	139,000,000
Diameter in miles,	3,000	7,500	8,000	4,300
Time of revolution,	88 days	224 $\frac{1}{2}$ days	365 $\frac{1}{4}$ days	687 days
Time of rotation,	24 hours	23 $\frac{1}{2}$ hours	24 hours	24 $\frac{1}{2}$ hours
Inclination of axis,	(unknown)	75°	23 $\frac{1}{2}$ °	28 $\frac{3}{4}$ °
Comparative velocit. per hr.,	104,000	77,000	65,000	53,000
“ density, (water be'g 1.)	6 $\frac{1}{3}$	5.56	5 $\frac{2}{3}$	4.
“ masses, (earth be'g 1.)	1-16	$\frac{7}{8}$	1	3-25
“ volumes, (earth be'g 1.)	1-20	4-5	1	1-6

	JUPITER.	SATURN.	URANUS.	NEPTUNE.
Distance from the sun,	476,600,000	871,000,000	1,754,000,000	2,746,000,000
Diameter in miles,	85,000	70,000	33,000	37,000
Time of revolution,	12 yrs nearly	29 $\frac{1}{2}$ years	84 years	165 years
Time of rotation,	10 hours	10 $\frac{1}{2}$ hours	9 $\frac{1}{2}$ hours	(unknown)
Inclination of axis,	3°	26 $\frac{3}{4}$ °	(unknown)	(unknown)
Comparative velocity, pr h.	28,700	21,000	15,000	12,000
“ density, (water be'g 1.)	1 $\frac{3}{8}$	3 $\frac{1}{4}$	1	9-10
“ masses, (earth 1.)	301	90	12 $\frac{2}{3}$	164-5
“ volumes, (earth 1.)	1,300	1,000	65	100

11. The *asteroids* between Mars and Jupiter are about 192 in number and have an average distance of about 260 millions miles from the sun.

12. The moon is 240,000 miles distant from the earth; diameter 2,160 miles; time of revolution about the earth 27 $\frac{1}{3}$ days. This is called the *sidereal month*; the synodical *lunar month* contains 29 $\frac{1}{2}$ days. The *synodical month* is the time from one new moon till the next new moon.

13. The sun is by far the largest body in the planetary system. His diameter is nearly 110 times that of the earth and is 1,700,000 larger in volume. We may form a *better idea* of the immense size of the sun if we imagine the center of the sun to be where the center of the earth is. He would then extend to the orbit of the moon and nearly 200,000 miles beyond. Large as our sun is, his size sinks almost into insignificance when compared with some of the other mighty fixed stars. Sirius, “the dog star,” if set in the place of the sun would appear 125 times as large, and another star has been discovered whose diameter is 200,000,000 miles.

CHAPTER III.

1. The *orbit* of a planet is the path it describes around the sun.
2. The earth's orbit is called the *ecliptic*.
3. The *plane of the ecliptic* is an ideal surface, conceived as coinciding with the ecliptic.
4. The form of the earth's orbit is an *ellipse*.

An ellipse is a curved line from any point of which, if two straight lines be drawn to two points within called the foci, the sum of these lines will always be equal. The long diameter is called the transverse, and the short diameter is called the conjugate diameter. The sun occupies one of the foci of the earth's orbit.

5. When the sun is nearest the earth, it is said to be in *perihelion*; when farthest from the earth, in *aphelion*. The sun is in perihelion about the 1st of January, and is then 3,000,000 miles nearer the earth than when in aphelion. Aphelion distance is 93,000,000 miles; perihelion distance, 90,000,000 miles.

Aphelion is derived from two Greek words; apo meaning from, and helios meaning sun. Perihelion from peri, meaning near, and helios, sun.

6. The path of the moon is also an ellipse. When the moon is nearest the earth, it is said to be in *perigee*; when farthest away, in *apogee*. *Gee* in Greek means earth.

CHAPTER IV.

SHAPE OF THE EARTH.

1. The *shape of the earth* is that of a globe, ball or sphere.
2. It is found, however, by calculation that the earth is not a perfect sphere: it is flattened at the poles, so as to be twenty-six miles more in diameter at the equator than at the poles, and hence is called an oblate spheroid. The oblateness of the earth, is said, to have been caused by its axillary motion, while in a plastic condition.
3. A *sphere* is a body bounded by a curved surface, all points of which are equally distant from a point within called the center. *Hemisphere* is a half sphere.
4. A *spheroid* is a body nearly spherical. Spheroid means like a sphere. A spheroid flattened at the poles is called an *oblate spheroid*. If lengthened in the direction of the poles, it is called a *prolate spheroid*.
5. The *axis* of a planet is the diameter upon which it revolves. The *poles* are the ends of the axis.
6. The *diameter* of a sphere is a straight line passing through its center and limited by its surface. The *polar diameter* of the

earth is the straight line passing from one pole to the other; its length is 7,899 miles. The *equatorial diameter* is the distance through the earth at the equator and measures 7,925 miles (nearly). The difference between the polar and equatorial diameters is, therefore, about 26 miles.

It is accordingly about 13 miles farther from the surface to the center of the earth at the equator than at the poles; hence rivers which flow toward the equator have their mouths, theroretically speaking, higher than their sources. We may then ask, does the Mississippi or any other river flowing toward the equator, flow up hill? We are said to be going up hill when we increase our distance from the center of the earth, and as the mouth of the Mississippi is more than four miles higher than its source it may rightly be said to flow up hill.

This strange paradox as you may call it, is explained as follows: The centrifugal force of the earth causes the waters of the earth to flow toward the equator, (as it also caused the earth's crust to bulge out at the equator) and by this force rivers flowing toward the equator, are made to flow up hill. It is true all rivers flow toward the level of the sea, but the sea level is not what it would be if the earth did not rotate; it is higher at the equator and lower at the poles. Should the earth's rotation on its axis cease, the waters of the Gulf would flow back through the channel of the Mississippi northward; the regions about the poles would be covered by the sea, while in the equatorial regions the bottom of the ocean would appear as dry land. The surface of the waters would be everywhere equally distant from the center of the earth.

7. The *circumference* of the earth is the distance around it. The polar circumference measures 24,865 miles, and equatorial circumference 24,899 miles.

8. In the early ages of the world, mankind supposed the earth to be a vast plain terminating on all sides in a shoreless sea or region of darkness. This idea prevailed till about 400 years ago, when the true form of the earth was ascertained—though some philosophers seem to have suspected the globular form of the earth at an earlier date.

9. The spherical form of the earth is proven in many ways:

(1) Persons have frequently been round the world as a fly is seen to creep around an apple. Ships are constantly sailing round the earth.

(2) The circular shape of the horizon everywhere on the earth's surface is a second proof. When you are on top of a high mountain you can see that the land and sea slope away on all sides, as if you stood on a vast globe.

(3) The sea is observed to be globular; for the masts of an approaching ship are seen first, in the distance, and the hull afterward.

(4) An eclipse of the moon is produced by the earth coming between the sun and moon, and casting its shadow upon the latter. This shadow of the earth is observed to be always circular.

(5) All the other planets are globular, hence we may fairly infer that the earth is round.

(6) By actual measurement it has been found to be that of an oblate spheroid.

(7) The opposite walls of a building, if built perpendicular, are farther apart at the top than at the bottom.

(8) If the earth were a flat surface, the sun would rise every where at the same time, whereas it is known that the farther West on any given parallel, the later the sun rises.

10. The earth is surrounded by a thin transparent element, called the air or atmosphere, which exhibits the phenomena of rain, snow, clouds, etc. The solid part of the earth is composed of matter in many forms—as soil, rocks, fire, vapor, water, vegetables, animals, etc. All these are kept together by a principle of attraction called gravitation. The operation of this is easily illustrated.

11. If we throw a stone into the air, it falls to the earth: that is, it is drawn back to the earth by attraction of gravitation. It is this power or principle which keeps the hills, rocks, houses, cities, and seas steadfast on the earth. This principle never fails. It operates at all times and in all places, on the whole surface of the globe, so that upon whichever side we may be, we are kept upon it. Thus it is that every part of the surface of the world is habitable by man and animals.

CHAPTER V.

MOTIONS OF THE EARTH.

1. The earth has two principal motions—one, diurnal on its own axis, and the annual around the sun. This double motion of the earth also belongs to the other planets, and perhaps to all the heavenly bodies. Day and night proceed from the first motion, and the seasons of spring, summer, autumn, and winter, from the second. The line on which a wheel turns is called an *axis*. The earth is supposed to have such an axis or line of revolution, the ends of which are called the *poles*. The North end of the earth's axis is called the north pole, and the South end of the earth's axis is called the south pole.

2. The earth's axis is inclined $23\frac{1}{2}$ degrees from a perpendicular to the ecliptic; that is, it makes an angle of $66\frac{1}{2}$ degrees with the ecliptic.

3. Rate of motion on the parallels:

Equator—1037½ miles per hour.	70 degrees—354 miles per hour.
30 degrees—896 miles per hour.	80 degrees—180 miles per hour.
40 degrees—793 miles per hour.	85 degrees—90 miles per hour.
50 degrees—665 miles per hour.	90 degrees—0 miles per hour.
60 degrees—517 miles per hour.	

4. The following are the proofs that the earth revolves around the sun.

(1) A change of seasons can be explained satisfactorily only on the supposition that the earth revolves around the sun.

(2) Since all the other planets possess this motion it is fair to infer that the earth does not constitute an exception.

(3) The earth is included under Kepler's *third law*, which is that "the squares of the periodic times of the planets are proportional to the cubes of their mean distances from the sun." The *periodic time* is the time it takes a planet to revolve around the sun; 365¼ days is the periodic time of the earth.

(4) The phenomena termed aberration of light can only be explained on this supposition.

5. The earth is kept in its place in its orbit by the action of two powerful forces. The one is called *centripetal* force or that force which tends to draw all bodies to a common center; the other is called *centrifugal*, or that force which causes bodies to fly away from the center of revolution. The former is generally known as the force of gravity. The joint and continuous action of these two forces causes the earth to revolve around the sun as it does. Destroy the centrifugal force and the earth would fall to the sun; destroy the centripetal force and the earth would fly off through space, in a straight line tangent to its orbit.

6. Proofs that the earth turns on its axis.

(1) From the laws of centrifugal force it is impossible for the sun to revolve around the earth, and the only other conclusion is that the earth turns on its axis.

(2) All the other planets, so far as ascertained, rotate on their axis, and the inference is that the earth obeys the same law.

(3) If we drop a stone from a high tower, it will fall to the east of a perpendicular line, showing that the earth revolves from west to east.

(4) The diminished weight of bodies at the equator must be the result of centrifugal force, caused by the rotation of the earth. A body removed from the poles to the equator loses 1-289 of its weight.

(5) The flattening of the earth at the poles is the legitimate result of its rotation.

(6) The pendulum experiment of Foucault proves the diurnal motion of the globe.

7. Each year contains 365 days, 5 hours, 48 minutes, and 48 seconds, but the earth makes one more revolution on its axis than there are days in the year : so that in 365 days the earth has made 366 rotations.

CHAPTER VI.

TIME.

1. It is *noon* at any place when the sun is on the meridian of that place.

2. A *solar day* is the time that elapses from noon one day till noon the next day, and is about 24 hours long.

3. A *sidereal day* is the interval of time between two successive appearances of a star upon a given meridian, and is about 4 minutes shorter than a solar day. This difference of time is caused by the revolution of the earth around the sun, and may be explained as follows:

Let the hands and face of a watch represent the sun, earth and its orbit and axillary motion. At 12 o'clock, the hands are together and if the hour hand did not move, 60 minutes would elapse during each revolution of the minute hand to bring it again to the hour hand, whereas on account of the motion of the hour hand, more than 60 minutes are required to bring them together. So it is with the earth in its diurnal and annual motion: more than one exact rotation is required to bring the sun from any meridian to-day to the same meridian to-morrow.

4. The sidereal days are all of the same length, but the solar days vary a little at different times of the year.

5. *Cause of inequality of solar days.* The earth does not move at a uniform rate in its orbit, but when near perihilion moves faster than at aphelion: this in connection with the elliptical form of the orbit and the obliquity of the ecliptic causes the solar days to vary a little in length.

6. *Sun fast and sun slow.* A good clock is made to keep uniform and mean time (called also astronomical time) and, consequently must, at times, be behind the sun, and at other times in advance.

7. The difference between the length of the true solar day and the true mean day is called the "*equation of time*."

8. When the clock is behind the sun, the sun is said to be fast: when the clock is in advance of the sun, the sun is said to be slow.

9. From December 24th to April 15th the sun is slow.

From April 15th to June 15th the sun is fast.

From June 15th to September 1st the sun is slow.

From September 1st to December 24th the sun is fast.

At the above dates solar and mean time agree.

10. To find true clock time when sun is slow add "equation;" to find true solar time, if the sun is fast, subtract the equation.

11. A *sidercal year* is the interval which elapses from the time the sun leaves a star until it reaches it again. It measures 365 days, 6 hours, 9 minutes, and 9 seconds.

12. A *tropical year* is the period which elapses from the time the sun leaves the vernal equinox till it reaches it again, and measures 365 days, 5 hours, 48 minutes, and 48 seconds. This is the *common year*.

13. The *anomalistie year* is the period from the sun's leaving perihelion, till it reaches the same again. It measures 365 days, 6 hours, 13 minutes, 45.6 seconds.

CHAPTER VII.

INSTRUMENTS.

1. A *compass* is an instrument used to determine horizontal directions in reference to the North and other cardinal points. It consists of a magnetized needle made to turn freely on a point, and enclosed in a case, containing a card graduated in reference to its particular uses. The needle always points to the magnetic north.

2. The *north magnetic pole* is in latitude 70° north, and longitude 97° west. The *south magnetic* has not yet been located exactly, but is about 75° south and 184° east.

3. North, east, south, and west are called *cardinal points*.

4. A *mariner's compass* has a needle permanently attached to a card so that both may move together. The card is divided into thirty-two equal parts or points called *thumbs*.

5. There are also two other varieties of compasses, viz: Azimuth compass and surveyor's compass.

6. How to read the points of a compass:

N., North.	N. E. b. N., North-East by North.
N. b. E., North by East.	N. E., North-East.
N. N. E., North, North-East.	N. E. b. E., North-East by East.

From the preceding as examples the pupil will be enabled to read the following abbreviations:

n.e.b.e.	e.b.s.	s.e.b.s.	s.b.w.	s.w.b.w.	w.b.n.	n.w.b.n.
e.n.e.	e.s.e.	s.s.e.	s.s.w.	w.s.w.	w.n.w.	n.n.w.
e.b.n.	s.e.b.e.	s.b.e.	s.w.b.s.	w.b.s.	n.w.b.w.	n.b.w.
e.	s.e.	s.	s.w.	w.	n.w.	n.

CHAPTER VIII.

GLOBES AND MAPS.

1. Globes and maps are the ordinary means of representing the earth's surface. A *map*. (*mappa*, a napkin, a signal cloth,) is a representation of the whole or a part of the earth's surface. A *map projection* is a method of representing the earth's surface on a plane.

2. An *atlas* is a collection of maps illustrating the same subject, bound in a volume.

3. *Mercator's projection*. A map drawn on Mercator's projection has all the meridians and parallels straight lines. The regions near the poles are much exaggerated from their true form, so that maps on this projection are not correct representations of the earth's surface, but they show relative positions very correctly. They were invented by General Mercator, a Flemish geographer, and are extensively used by navigators, in which the correct bearings of objects are of more importance than the true figures of countries. They are also used extensively in physical maps to show isothermal lines, currents of air and water, etc.

4. The *orthographic projection* represents the earth's surface as it would seem to an observer viewing it at a great distance from the earth: the center of the map is delineated in nearly correct proportions, but the sides are much distorted.

5. In the *stereographic projection*, the eye is supposed to be placed on the surface of the earth, and the surface to be delineated is the opposite hemisphere or a portion of it, the concave surface being turned toward the observer. This kind of a map is much used in our books on descriptive geography. There are many varieties of the stereographic projection; the following are some of the principal: An *equatorial projection* is one in which the equator is taken as the center: the *polar projection* is one in which the pole is taken as the center of the map: an *oblique projection* is one in which parallels drawn from every point of a figure meet the plane of projection obliquely.

6. The *conical projection* is used when it is desired to represent only a small portion of the earth's surface, as a single country or State.

This method may be understood by supposing a cone of paper to be set upon an artificial globe in such a way that the paper touches the globe along the central parallel of the country to be shown on the map. The meridians and parallels on each side of this central one are then conceived to be brought up to meet the cone, and to be projected on it along with the outlines of the land between them. When the cone is unfolded it may be spread out on a flat surface. In this case the country lying along the central line of the map is very accurately represented, but there is

some distortion along on each side, which increases as the area included in the map is extended.

7. The *gnomic* or *central projection* represents the surface as it would appear to an observer at the center of the earth, supposing the earth to be a hollow sphere and the figures of land and water forms visible.

8. The *globular projection* represents the earth's surface as it appears to the eye of an observer at a distance from the earth equal to the sine of 45° ; the meridians intersect the equator at equal distances.

9. There is another method of constructing maps in which the meridians are arcs of circles cutting the equatorial diameter at equal distances, and the parallels are arcs of circles cutting the polar diameter at equal distances; they give very good representations of the forms and relations of area, and are simple in construction.

10. In all geographical maps, the top of the map is north; the right hand, east; the bottom, south; and the left hand, west.

CHAPTER IX.

CIRCLES OF THE EARTH.

1. Circles of the earth are imaginary lines passing around it. *Semicircles* are half circles. A *great circle* divides the earth into two equal parts. A *small circle* divides the earth into two unequal parts, as the parallels.

(1) The *equator* is a great circle passing east and west around the world at an equal distance from the poles.

(2) *Parallels* are circles drawn around the world parallel to the equator.

(3) *Meridians* are semicircles drawn from one pole to the other. *Meridian circles* are circles passing round the world from north to south through the poles.

(4) The *ecliptic circle* is a great circle passing round the world making an angle of $23\frac{1}{2}^\circ$ with the equator.

(5) The *arctic circle* is a parallel $23\frac{1}{2}^\circ$ from the north pole. The *antarctic circle* is a parallel $23\frac{1}{2}^\circ$ from the south pole.

(6) The *tropics* are parallels, and are $23\frac{1}{2}^\circ$ on each side of the equator; the one north of the equator is called the *tropic of cancer*, and the one south of the equator, the *tropic of capricorn*.

2. The tropics are located where they are because they show the limit of the sun's vertical rays north and south of the equator.

Tropo from the Greek signifies turning. Cancer and Capricornus are names of two of the signs of the zodiac, in which the sun was to be seen at the times of its limits north and south of the equator.

3. The *zodiac* is a belt 8° on each side of the celestial equator, in which are the twelve signs of the zodiac: viz.—Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius, Pisces.

4. The *day circle* is the line or circumference of a circle which divides light from darkness. One-half of the earth's surface is illuminated by the sun at one time; hence this line is a great circle. Owing to the earth's motion from *west* to *east*, this line seems to move from *east* to *west*.

5. The *Sunday line*, or *International Date line* is the line from which every date on the earth is reckoned. It passes through Behring's strait, and along the coast of Asia to near Borneo where it turns and passes between Borneo and Philippine islands, and thence along the northern limits of the East Indian islands, New Guinea, and New Zealand. Immediately east of this line it is always one day later than immediately west of it. For example:—When it is Sunday just east of this line, it is Monday on the west side. In traveling around the world westward we lose a day, and in traveling eastward we gain a day, and the correction is made at the above named line to avoid confusion of dates. Navigators are in the habit of making the correction in time, at the 180th meridian, from Greenwich.

CHAPTER X.

LATITUDE AND LONGITUDE.

1. *Latitude* is distance from the equator, measured in degrees, minutes, and seconds.

(1) Latitude is measured north and south from the equator 90° . Places north of the equator are in *north latitude*; places south of it are in *south latitude*.

(2) The degrees of latitude are numbered on the sides of a map.

(3) The length of each degree is 60 geographical miles, or $69\frac{1}{4}$ common miles.

A *geographical* or *nautical* mile is one-sixtieth of a degree on the equator,—about 2025 yards. It is used in measuring distances on the sea.

(4) The width of a degree of latitude is not the same everywhere; owing to the flattening of the earth at the poles, the width of a degree increases as we go from the equator toward the poles.

Increase of degrees of latitude in statue miles one degree on the meridians:

At equator.....	68.698.	At 50 degrees.....	69.109.
At 10 degrees.....	68.721.	At 60 degrees.....	69.222.
At 20 degrees.....	68.781.	At 70 degrees.....	69.314.
At 30 degrees.....	68.873.	At 80 degrees.....	69.375.
At 40 degrees.....	68.984.	At 90 degrees.....	69.396.

(5) All places situated on the same parallel have the same length of day.

2. *Longitude* is the distance, in degrees, east or west of an established meridian.

(1) Longitude is measured 180 degrees east and west of the prime meridian. 210 degrees east longitude amounts to the same as 150 degrees west longitude.

(3) Nearly every country reckons longitude from the meridian passing through its capital; thus, the French reckon from Paris; the Germans from Berlin; the English from Greenwich, near London; the Americans from Washington.

(3) In most American maps longitude is reckoned from both Washington and Greenwich. At the top of the map the degrees of longitude are given from one of the places; at the bottom, from the other place.

(4) A degree of longitude at the equator measures 69.164 miles.

At 5 degrees.....	68.901.	At 50 degrees.....	44.545.
At 10 degrees.....	68.117.	At 55 degrees.....	39.760.
At 15 degrees.....	66.821.	At 60 degrees.....	34.669.
At 20 degrees.....	65.014.	At 65 degrees.....	29.310.
At 25 degrees.....	62.718.	At 70 degrees.....	23.725.
At 30 degrees.....	59.947.	At 75 degrees.....	17.957.
At 35 degrees.....	56.714.	At 80 degrees.....	12.049.
At 40 degrees.....	53.053.	At 85 degrees.....	6.048.
At 45 degrees.....	48.982.	At 89 degrees.....	1.211.
		At 90 degrees.....	Zero.

(5) All places on the same meridian have the same time of day.

(6) The distance around the world on any of the parallels may be found by multiplying the length of a degree of longitude on the given parallel by 360. For example:--The length of a degree of longitude on the 41st parallel is 52.269 miles; hence $52.269 \times 360 = 18,816.84$, miles, the circumference.

3. Latitude and longitude are of use in determining the exact location of places both on land and sea; the mariner on the wide ocean has no other way of describing his position. Thus, when we say Columbus is situated 40° north latitude and 83° west longitude, we note the place where these two lines intersect to determine the location.

Longitude is also very useful in measuring time, since the sun seems to pass entirely around the world or over 360° , in 24 hours,

it must pass over 15° every hour, and as the sun seems to travel westward, time is earlier west and later east. The difference of longitude between two places divided by 15, will give the difference of time in hours. Having given the time of a certain place, the time of a place west is found by subtracting the difference of time from that of the first named place : if east, by adding the difference of time.

CHAPTER XI.

ZONES.

1. *Zone* means belt or girdle.
2. The earth is divided into five *mathematical*, or *astronomical* zones bounded by the tropics and polar circles.
 - (1) The *torrid* or *hot zone* lies between the northern and southern limits of the tropics. Some geographers classify the torrid into the north and south torrid.
 - (2) The *two temperate zones* lie, one *north* between the tropic of Cancer and Arctic circle, and one *south* between the tropic of Capricorn and the Antarctic circle.
 - (3) The *two frigid zones* lie, one north of the Arctic circle, and the other south of the Antarctic circle.

WIDTH OF ZONES.

3. The *width* of each zone in degrees is as follows : Torrid, 47° ; temperate, 43° ; frigid, $23\frac{1}{2}^{\circ}$.

The width of the torrid zone is about 3,223 miles : the temperate zones each about 2,978 miles : the frigid zones each about 1,627 miles.

3. The width of the zones of any planet, depends on the inclination of its axis.

If the earth's axis were inclined but 15° instead of $23\frac{1}{2}^{\circ}$, the tropics would be 15° from the equator, and the polar circles 15° from the poles : consequently, the north torrid zone would be 15° wide : the temperate zones 60° each : the frigid zones 15° each.

EXAMPLES FOR PRACTICE.

What would be the width of each zone if the earth's axis were inclined 18° , 20° , 25° , 30° , 35° , 45° , 75° ?

5. The torrid zone derives its name from the great heat which prevails here at all times.

There is never snow or frost here. The climate, or general character of the weather, is always warm : and instead of the seasons of spring, summer, autumn and winter, there are but two seasons, the wet and the dry. The wet season is called winter, and the dry season summer.

6 The *vegetation* in the tropical regions is generally luxuriant. Fine fruits—such as oranges, lemons, pine-apples, coconuts, and rich melons—abound : and often the ripe fruit and the opening blossoms hang side by side on the same tree. There are also delicious spices—as cinnamon, pepper, cloves, and nutmegs ; with other choice productions—such as coffee, sugar, indigo, etc.

It abounds in the greatest variety of plants and flowers,—the most profuse and beautiful that the eye can behold ; the air is filled with the sweetest perfumes ; and all nature seems alive in clothing the earth with beauty and enchantment.

7. Though thus favored by nature, these regions are subject to terrific whirlwinds, desolating earthquakes, and deadly fevers ; besides they are the abode of millions of tormenting insects and poisonous reptiles. Here is also the home of the lion and tiger, the giraffe and hippopotamus, the anaconda and crocodile, the rhinoceros and the elephant—the giants and wonders of the animal kingdom.

The *animals*, too, are greater in variety, larger and stronger, and more ferocious than those of the other zones.

The *inhabitants* of the torrid zone are generally black or of a dark color. They are, for the most part, indolent, and live in slightly-built dwellings. These effects are produced, in a measure, by the excessive heat which makes labor irksome.

8. At the *equator*, *days and nights* are of equal length ; the sun rises and sets at points due east and west.

9. In the *temperate zones*, the climate is mild ; here are the four seasons, *spring, summer, autumn, and winter* ; but the seasons of the *north* and *south temperate zones* are just *opposite* ; while we have summer in the north temperate, winter prevails in the south temperate, and *vice versa*. A man's shadow which falls north in the north temperate zone, would fall south in the south temperate zone.

10. The *fruits* in these zones are grapes, apples, pears, peaches, plums, cherries, strawberries, etc. The chief vegetable productions are wheat, rye, oats, barley, and maize, or Indian corn ; also potatoes, beets, turnips, parsnips, and the like. In the warm parts rice and cotton are produced. We see here the ox, horse, ass, camel, sheep, goat and hog in a state of domestication ; and in the forest, instead of the gigantic rhinoceros and elephant, are the wild boar, wolf, buffalo, elk, deer, fox, bear and lynx.

11. In the temperate zones, the *people* have, generally, a light or white skin. In the northern temperate zone they are charac-

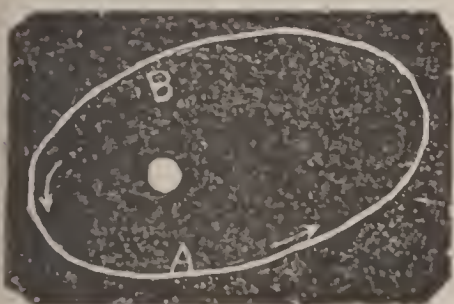
terized by industry, intelligence and energy. Here are the chief seats of human improvement and civilization. Here the people are generally well clad, and for the most part live in substantial and comfortable houses. Here have always existed the most powerful and most civilized nations of both ancient and modern times.

12. The *northern* and *southern* zones are called frigid, from the intense cold which prevails there for the greater part of the year.

13. The southern frigid zones are little known; though it appears that around the south pole there is either a continent or a group of numerous islands. The land here is uninhabited, and always covered with snow and ice. The northern frigid zones are better known.

14. The frigid zones have each but two seasons, a winter of nine months and a summer of three. Vegetation is confined to mosses, and a few stunted trees, shrubs, and grasses bordering on the temperate zones. None but the hardiest animals, such as the reindeer, white bear, musk-ox, and a few others, find subsistence in these icy regions. Its waters, however, are the home of the largest sea-animals; as, the whale, walrus, seal, and the like. The inhabitants are few in number, of low stature and swarthy complexion, and find their chief subsistence along the shores of the frozen seas, upon seals, whales, and other marine animals. The Aurora Borealis, or Northern Light, is seen here in the greatest splendor.

15. At the north pole the sun remains above the horizon for six months, during which time there is constant day, and then during the next six months constant night. This is not strictly



true; owing to the elliptical form of the earth's orbit. It takes the earth longer to pass from A to B, during which time we have summer, than from B to A, during which time we have winter. It takes the earth nearly eight days longer to describe the remote half of its orbit than

the near half. The summer, or the time the sun remains above the horizon, is, consequently, about eight days longer than the winter. The refraction of the sun's rays through the atmosphere causes the sun to appear above the horizon several weeks earlier and to remain several weeks longer above the horizon than it is in reality; this, together with the great length of twilight (about one month) relieves the north pole of much of the long dark night which would otherwise brood over it.

16. The summer days increase in length as we go from the equator toward the poles. The following table exhibits the length of the longest day in the different latitudes:

Equator.....	12 hours.	55 degrees.....	17.3 hours.
10 degrees.....	12.7 "	60 degrees.....	18.7 "
20 degrees.....	13.3 "	Polar Circles.....	24 "
Tropics.....	13.5 "	67 ¹ / ₂ degrees.....	1 month.
30 degrees.....	14.0 "	69 ¹ / ₂ degrees.....	2 months.
35 degrees.....	14.5 "	73.3 degrees.....	3 "
40 degrees.....	15.0 "	78.3 degrees.....	4 "
45 degrees.....	15.6 "	84 degrees.....	5 "
50 degrees.....	16.3 "	North Pole.....	6 "

During the summer more than one-half of the northern hemisphere is illuminated by the sun, and the farther north the greater is the circle of illumination on the parallels, until we get near the north pole where the parallels are entirely under the sun's rays, hence the days grow longer as we go north. During the winter season the opposite is true.

Again, since during the summer in the northern hemisphere, more than one-half of each parallel is illuminated, the day is longer than the night.

17. If, on the 21st of June, we were standing on the Arctic circle, we would see the sun at midnight on the horizon just across the north pole; as the sun on that day shines beyond the pole to the Arctic circle. But a little south of the Arctic circle the north pole would hide the sun for a short time and cause it to rise a little east of the north pole and set a little west of the same. Further south the region about the north pole would form more of an obstruction and so hide the sun for a longer period, causing the sun to rise and set farther south. Proceeding in this way, we would observe the sun rising farther south but still north of east until we get to the equator, where it always rises due east and sets due west.

The same explanation will serve to show why, during the summer season, the sun shines into the windows on the north side of a house.

CHAPTER XII.

SEASONS.

1. A *change of seasons* is caused by the earth's annual motion and by the inclination and constant parallelism of its axis.

2. The torrid zone has two seasons, a wet and a dry, each six months long; the frigid, two seasons, winter and summer; and the temperate zones each four seasons, spring, summer, autumn,

and winter. The seasons of the two temperate zones are the same but in an opposite order.

3. Owing to the elliptical form of the earth's orbit, the seasons are not of the same length. In the north temperate zone, spring has 93 days ; summer, 93 days ; autumn, 90 days ; and winter, 89 days.

4. If the earth's axis were perpendicular there could be no change of seasons, no variation in the length of days ; the sun would always rise due east at 6 o'clock and set at 6 o'clock. Only a small part of the world could be inhabited, and that in the tropical regions. The torrid zone would be divided into rainless belts and belts on which the rain would fall like a continuous deluge.

5. If the earth's axis were parallel to the ecliptic, the sun would appear to travel around the earth from north to south over the poles. Each pole would have one day and one night during the year, each six months long. The sun would cross the equator twice in his annual course, and twice would days and nights be of equal length. The regions about the equator would have two summers and two winters, each three months long, during each year. If this were the case, the world would not be habitable. The sun would be absent so long from one part of the earth that everything there would perish of the excessive cold. All the strength of the sun would be spent in thawing out the world, and ere this would be fully accomplished in one part he would be so far on his course that the earth would again begin to freeze.

BENEFITS ARISING FROM THE EARTH'S INCLINATION.

6. Here, as in all of God's works we can see the infinite wisdom of the Creator. If it were possible, the inclination of the earth's axis could not be changed without disastrous effects. The sun warms one side of the earth at a time and so prepares it for the reception of seed, and after having given sufficient time for planting and gathering in a bountiful harvest, he, in a measure, withdraws his warm and genial rays to make glad the other hemisphere. Nearly the whole earth is thus made a fit abode for man. As we contemplate the sun in his majestic course through the skies, and behold how he alternately makes glad the inhabitants of the northern and southern zones by his invigorating powers, our hearts are made to swell with gratitude toward the Author of all things, who giveth us every good and perfect gift.

CHAPTER XIII.

POINTS, ETC.

1. The *horizon* is a place or point where the earth and sky seem to meet.

2. The *horizon circle* is the entire line which bounds our views on the earth's surface. The latter is called the *sensible horizon* to distinguish from the *rational horizon*, which is the great circle of the celestial sphere parallel to the *visible* or *sensible horizon*, and which divides the earth into two hemispheres.

(1) The *zenith* is a point in the heavens directly over our head.

(2) The *nadir* is a point on the opposite side of the heavens.

3. *Antipodes* are those who live on the opposite side of the world from us.

4. *Antecians* are those who live on the opposite latitude but on the same meridian.

5. *Perieceans* are inhabitants of the opposite side of the globe, in the same latitude.

6. A *Periscian* is an inhabitant within a polar circle, whose shadow during some portion of the summer, must, in the course of a day, move entirely around and fall towards every point of the compass—a term now little used.

7. *Antichthon* is one of the inhabitants of an opposite hemisphere.

8. *East* is said to be the point where the sun rises, and *west* where the sun sets. *North* is in the direction of the north star, and *south* is the opposite point.

Since the sun in our latitude does not always rise in the same place, it is not strictly correct to say that the east is where the sun rises. Twice only during the year does the sun rise due east and set due west; namely,—at the autumnal and vernal equinoxes.

Neither would a man travel east or west, if he should travel on one of the parallels. If a man should travel due east or west around the globe he would be obliged to cross the equator twice, at points 90 degrees east and west of his starting place, and reach a point south of the equator equal to the latitude of his starting point north of the equator. It is to be remembered that the terms east and west are not absolute but relative terms, as what was east an hour ago is not east now.

NOTE.—On the surface of the earth the east of any place may be considered as at right angles to the meridian of that place; but as no two persons on the same parallel have the same east, corrections must be made between the points, a fact familiar to surveyors.

9. *Equinoctial points* are points where the sun crosses the equator. Equinox means equal nights.

10. *Vernal equinox* occurs the 20th of March : autumnal equinox on the 22d of September, at which times days and nights are equal.

11. The *solstitial points* are the sun's northern and southern limits. Summer solstice occurs on the 21st of June, and winter solstice on the 21st of December.

Solstice is derived from *sol*, a Latin word meaning sun, and *stare*, to stand; so named because when the sun has reached his limits north and south he seems to be stationary for a few days in the heavens.

12. The *altitude* of a heavenly body is its distance, in degrees, above the horizon. There are 90° from the horizon to the zenith.

13. If, at the time of the equinoxes, you were standing on the north pole you would see the sun on the horizon, and his altitude would be zero : for every degree you go south, the sun's altitude increases a degree, until you reach the equator when the sun's altitude is 90° , or is in the zenith.

14. At the time of the equinoxes, the sun's altitude, at any place, at noon, is equal to the complement of the latitude of that place; that is, the difference between the latitude and 90° : thus, the altitude of the sun at noon, on the 41st parallel at the equinoxes, is $90^\circ - 41^\circ = 49^\circ$. Since the sun seems to travel north and south from the equator $23\frac{1}{2}^\circ$, his altitude on the 21st of June is $49^\circ + 23\frac{1}{2}^\circ = 72\frac{1}{2}^\circ$: on the 21st of December, $49^\circ - 23\frac{1}{2}^\circ = 25\frac{1}{2}^\circ$.

15. To find the sun's altitude on any day, at any place, if the sun is north of the equator, increase the complement of the latitude of the given place by the sun's distance north of the equator : if the sun is south of the equator, diminish the complement by the sun's distance south.

16. The distance of the sun north or south of the equator can best be obtained by means of a good globe. In the absence of a globe, this distance can be obtained approximately by means of a little calculation. Take such a part of $23\frac{1}{2}^\circ$ as the number of days since equinox or to equinox, (according as the sun is approaching or receding from the solstice) is of the whole number of days from equinox, or the solstice. Thus, the time from vernal equinox to summer solstice is 93 days, and on the 28th of April the sun has been north of the equator 39 days: hence, $\frac{39}{93}$ of $23\frac{1}{2}^\circ$ is the distance of the sun north of the equator.

PHYSICAL GEOGRAPHY.

CHAPTER I.

FORMATION OF THE EARTH.

The science of the origin or creation of the world or universe, is called *cosmogony*.

Physical Geography has been defined as a treatise on the earth in its natural state. We must introduce our subject by a *General View* of the structure of the earth. The general theory is, that the sun was once the nucleus or center of a nebulous mass, revolving on its axis ; that this became condensed, and that rings were thrown off which afterward formed into planets. This theory considers the earth to have been first in a gaseous state, similar to comets.

By degrees, its heat was dispersed and radiated into space ; in consequence of which the particles became condensed, yet in a state of fusion. The process of cooling went on, until the external crust of the earth became hardened into the solid materials of which we see it composed, yet leaving the central mass in a state of incandescence.

At first, in the process of cooling, the crust of the earth was perhaps broken and torn ; thus presenting the rugged aspect the telescope now unfolds to view in the moon. The pent-up fires within would seek vent, the volcanoes would disgorge their contents, and the earthquakes would shake and dislocate the land and the sea.

The rain and the tempest now began their work. Particles of earth were disengaged from the mountains, and borne by the floods to the valleys, and a soil was thus formed for vegetation.

After many changes, extending through millions of years, that sublime revolution which established the present arrangement of ocean, and continents, and the present races of animal and vegetable life, as described in the opening books of the Bible, was effected.

We have not the space to follow out in detail this wonderful history.

It must be sufficient to state that we now find the earth consisting of an exterior crust, composed of layers of rock and soil of different kinds, probably enclosing a mass of melted matter in the center.

These layers or strata are thrown one upon another in almost every possible position. Some of them are horizontal, others vertical, and others inclined at various angles. These beds or strata which are found at the greatest depth to which man has been able to penetrate are called *primary*, and are supposed to have been first formed.

Those strata which are found lying upon primary rock, and contain the remains of animals and vegetables, are supposed to have been formed at a subsequent period, and are called *secondary*.

These beds usually found reposing upon the secondary strata, composed of the fragments of both primary and secondary rocks, are called *tertiary*, or alluvial formations, and are supposed to be of more recent origin than either of the latter classes.

This theory does not deny the creation of the world as described by Moses; but on the contrary is perfectly consistent with the narrative as recorded in the first chapters of Genesis.

The plan of creation is a glorious subject for contemplation: everything has shaped itself as it occurred in the mind of the Creator from the beginning, and has acted in perfect obedience to the laws of the Almighty as laid down at the foundation of the world.

CHAPTER II.

Our Globe, as a whole, Comprises three Grand Divisions—Land, Water, and Atmosphere.

DIVISIONS OF THE EARTH'S SURFACE.

The surface of the earth is divided into land and water: about one-fourth is land and three-fourths water.

LAND SURFACE.

(1) A *natural division* is a division of the earth formed by nature: as islands, continents, lakes, mountains, etc.

(2) A *political division* is a division of the earth formed by man: as Ohio, France, Hardin county, etc.

(3) A *natural boundary* is one formed by nature: as rivers, lakes, mountains, and the like.

(4) A *political boundary* is a boundary line between political divisions ; for example :—the line that separates Ohio from Indiana is a political boundary ; the Ohio river on the south is a natural boundary, but the political boundary between Ohio and Kentucky is a line passing through near the middle of the river.

(5) The *land surface* may be classified into two general divisions :—first, as to the *horizontal projection*, called *contour forms* ; second, as to its *vertical elevation*, called *relief forms*.

CHAPTER III.

CONTOUR FORMS.

1. By the *contour* of a country is meant its coast.

2. A *coast* or *shore* is the land bordering upon a lake or the sea.

3. A *continent* is one of the largest *natural* divisions of land. There are three continents ; viz.,—the Western, the Eastern, and the South-Eastern, or Australian continent.

4. A *grand division* is one of the principal divisions of a continent and often contains many countries. The Western contains North and South America ; the Eastern continent, Europe, Asia, and Africa.

Recent discoveries have led to the supposition that there is a continent around the south pole, which has received the name of the *Antarctic Continent*.

The islands of the Pacific ocean have received the name of Oceanica.

5. An *island* is a body of land smaller than a continent and entirely surrounded by water.

(1) Islands are classified into *continental* and *oceanic*.

(2) *Continental* islands are those lying near or extending along the coasts of larger bodies of land and seem to be detached portions of the latter.

(3) *Oceanic* islands are those lying in the midst of the sea.

(4) Islands may be further classified as regards their structure into volcanic and coral.

(5) *Volcanic* islands are those which have been formed by volcanoes : as, the Aleutian, and some of the West Indies.

(6) *Coral* islands have been formed by the coral insect, a very small sea animal. The Great Barrier Reefs and the Bahamas are examples.

6. A *peninsula* (*pene*, almost, and *insula*, an island) is a large

portion of land extending into the sea, and often nearly surrounded by water.

7. An *isthmus* is a narrow neck of land joining two larger bodies of land; as, the isthmus of Panama which joins North and South America.

8. A *cape* is a point of land extending into water. A high and rocky cape is called a *promontory*. The southern point of America is called Cape Horn; that of Africa, Cape Agulhas.

9. An *archipelago* is a cluster of islands in the sea.

CHAPTER IV.

RELIEF FORMS.

1. A *plain* is a great extent of land, level or nearly level.

2. A *low plain* is less than 1,000 feet above the level of the sea.

3. A *plateau* is a plain 1,000 feet or more above the sea-level.

Although the following varieties of plains—prairie, pampas, Selvas, etc.—are not characterized wholly by relief, nevertheless it has been thought best to describe them here.

4. A *prairie* is a large treeless plain covered with grass, found in the United States. Prairie is a French word signifying meadow.

5. A *pampas* is a plain of this kind in South America. They occupy a large part of Argentina, and some of the adjoining countries.

6. *Steppes* are extensive treeless plains in the south-eastern part of Russia, and in Asia. Some of them are covered with grass like the prairies of North America; others are covered with a scanty vegetation and are almost barren.

7. The *Llanos* are plains in South America, one-half of the year barren, and the remainder of the year covered with rich vegetation.

8. *Selvas* are extensive plains in the valley of the Amazon, covered with trees.

A *savanna* is a plain of grass affording pasturage in the rainy season; but a few shrubs also grow upon it. It is only the zone which makes it to differ from a prairie.

10. A *heath* is a level tract covered with the plant from which the name has been derived.

11. *Deserts* are barren tracts of land, usually consisting of sand. The Sahara in Africa, nearly three times as large as the Mediter-

ranean sea, is more than 2,000 miles long. Travelers in crossing it are sometimes overwhelmed by drifting clouds of sand.

(1) A fertile spot in the desert is called an *oasis*.

(2) Oases are caused by springs in the desert, the water spreading out over the land and fertilizing it.

12. The *tundra* are frozen marshes in northern Russia and Asia. *Swamps* and *marshes* are tracts of land covered for the most part, or filled with water.

13. A *mountain* is a great elevation of land 1,000 feet or more above the surrounding country; but in measuring their height we measure from the sea-level. All elevations or depressions are measured from this level.

14. A *hill* is an elevation not so high as a mountain.

15. A *mountain range* or *chain* is a number of mountains connected at their base and extending in a line.

16. A *mountain system* is several parallel ranges trending through the same portion of the country.

17. The *trend* of a mountain range is the direction in which it extends.

The *crest* of a range is an imaginary line extending along its top.

18. A *mountain cluster* is a group of mountains; as, the White mountains of New Hampshire.

19. A *mountain knot* is formed where the ranges cross each other.

20. The *axis* of a continent is its chief mountain range. The Andes are called the axis of South America; and the Alps, of Europe.

21. The *summit* of a mountain is its highest point.

22. The *base* of a mountain is the bottom or that upon which it is supposed to rest.

23. The *slope* is the sides from base to top.

24. *Peaks* are the highest points in a range.

25. *Passes* are breaks or depressions in a range.

26. A narrow passage is called a *gorge*.

27. A *valley* is the land lying between mountains, or hills.

28. The principal depressions below the sea level are:

The Dead Sea,.....	1,294 feet.
Caspian and Aral Seas,.....	84 feet.
Desert in North Africa,.....	340 feet.
Lake Bahr—Assal, Abyssinia,.....	570 feet.
Dead Man's Valley, California,.....	100 feet.
Holland,.....	16 feet.

CHAPTER V.

GENERAL VIEW OF MOUNTAINS.

1. *Orology* treats of the structure and formation of mountains.

It will be observed that the principal mountain ranges *extend in the direction of the length* of a continent, island or peninsula. The *largest range* or *system* faces the largest, or deepest body of water. Where the *water pressure* seems to be the same on both sides, as in the case of islands or peninsulas, the mountains trend through the middle. For example: the Andes of South America face the Pacific; the Mountains of the Moon, in Africa, face the Indian ocean; the Rocky mountains face the Pacific, and the Apalachian, a lower range, face the Atlantic. In the Scandinavian peninsula the Kiolen mountains are nearer the Atlantic; in the islands Cuba, Madagascar, Java, etc., the ranges trend through the middle.

2. *Various reasons* have been assigned for this peculiarity. It is doubtless owing to the contraction of the earth, caused by the cooling of the central mass, thus producing folds or upheavals and depressions in the crust of the earth. In these depressions the waters of the clouds would gather when the earth became cool enough to allow the water to rest upon it. The waters filling these depressions would force the crust of the earth down by their great weight, and accordingly other portions of the earth's surface must rise to accommodate the new position.

Breaks or folds in the earth's crust would be made near the shores and increased in proportion to the downward pressure of the sea. Hence, it can easily be seen why mountains should be highest near the deepest body of water, and that where the lateral pressure is the same on both sides, or on all sides the mountains should occupy a central position, as was noted in the case of islands, peninsulas, etc.

Large *land areas* have successions of folds produced in this way, with the highest in the middle, thus making mountain systems.

3. The *process of mountain making* has not been confined to ages long ago; but even, at present, the same forces, are at work. The Aleutian islands are of recent formation, some of which have been formed within the memory of man. Mt. Jorullo in *south-western* Mexico, was thrown up during the year 1759 to a height of 3,000 feet; and this, too, in one of the most beautiful and fertile plains of the country.

GRADUAL ELEVATIONS AND SUBSIDENCES.

4. Besides the great and sudden changes made by the internal forces, others take place slowly but constantly, by which large

portions of the earth's surface are raised or lowered. The Scandinavian Peninsula is slowly rising in the north and sinking in the south. Southern Greenland is sinking. The North American coast from Labrador to New Jersey is rising. Holland is sinking. The range of the Andes especially near Chili is rising. The central portion of the Pacific ocean, covering an area of 6,000 square miles, is slowly sinking.

UTILITY OF MOUNTAINS.

5. "Mountains form a most important part of the mechanism of the world and show special adaptation and design."

(1) The highest mountains are found in the equatorial regions where they, by the different temperatures of their sides, furnish a varied vegetation and increase the area of land. Mountains are the natural refrigerators of the world; the cold currents of the upper regions meeting with the warm currents in the valleys, cause rains; by them rains are distributed more evenly than without them, and many a fertile region now teeming with vegetation would be destined to hopeless barrenness should they be leveled down.

(2) They contain the vast supplies of minerals which have contributed so largely to the progress and civilization of the world; they form natural boundaries between countries, and in their fastnesses have been bulwarks of defense and an asylum of liberty in all ages of the world.

(3) Nor must we forget to mention how much they add to the beauty of our earth in breaking the dull monotony of an otherwise uniformly level expanse. By them rivers are made to leap into existence, which bear on their bosoms the treasures of the world, and which, by the exchange of products of different lands, give employment, comfort, and happiness to busy millions of the earth's inhabitants.

While in a few instances they produce barren wastes, yet they make glad a thousand places, by their beneficent uses, and we could ill afford to do without them.

Remove the mountains and you destroy much of the earth's fertility, use, and beauty. Here, as in all God's works, we see the goodness and wisdom of the Creator manifest, and our hearts go out toward Him in gratitude and praise for his wonderful works.

CHAPTER VI.

VOLCANOES.

1. A *volcano* is a mountain which does, or has at some time cast out fire, smoke, melted lava, etc., from its interior.

2. A volcano which has ceased to burn is said to be *extinct*; a burning volcano is said to be *active*.

3. The upper part is cone shaped by the ejected matter and forms a hollow or bowl-shaped cavity called the *crater*. The most remarkable crater is found in the volcano of Kilauea in Hawaii. It is seven and one-half miles in circumference, three long, and one broad, and sinks more than 1,000 feet below the level of the plain.

VOLCANIC FORCE.

4. The *tremendous force* of volcanoes as displayed by their energy is truly remarkable; huge stones are thrown to a height of 2000 and 3000 feet, and Cotopaxi has been known to hurl rocks of immense size many miles. Whole continents are lifted up and the entire topography of countries has been changed; fields and forests have been thrown out of their positions by this mighty force.

NUMBER OF VOLCANOES.

5. There are above 400 volcanoes in the world of which more than 175 are in America. According to Johnston, 207 are more or less active.

ARRANGEMENT AND POSITIONS OF VOLCANOES.

6. As to their arrangement, volcanoes are classed into two systems, *central* and *linear*.

(2) *Central volcanoes* consist of a number of small cones grouped around a larger cone which is the seat of eruptions. Examples of this class are found in Iceland and in the Canary islands.

(3) *Linear*, as their name indicates, are arranged in lines at various intervals. Examples of the latter are found in the immense chains of mountains bordering on the Pacific ocean.

(4) It is found, too, that by far the greatest number of volcanoes is found in or on the borders of the ocean, of which the Pacific has the largest share.

It is thought that the waters of the sea find their way into the interior of the earth and by being converted into steam, produce an immense energy which finds vent in the mountains near the coast, as it is here where the crust of the earth was first broken in the formation of mountain ranges.

7. Again, by far the greatest number of volcanoes is found in the equatorial regions. The *reason given*, is that the earth began

to cool at the poles and accordingly the crust of the earth is thinner near the equator. Hence if force were exerted from the interior the crust would be more likely to break where it is thinnest. In the second place, the centrifugal force is greatest at the equator and diminishes toward the poles. This would assist in fracturing the earth about the equator and lead a way of escape to the internal fires of the earth.

THEORY OF VOLCANOES.

8. Many theories on the cause of volcanoes have been presented; but the most generally accepted theory is, that the earth's interior is a molten mass, and that this fluid is likely to be disturbed by the expansive force of vapors and gases, or the accumulation of electric matter directed in currents along the strata of the earth's surface or crust. This accumulates until the earth's crust is no longer able to restrain its force when fissures and openings through the crust take place, causing all the commotions already described. Volcanoes are sometimes termed the *safety-valves of the earth*, and when by any means they become clogged or stopped, all the dire results of an earthquake must follow.

CHAPTER VII.

EARTHQUAKES.

1. *Earthquakes* are quakings or commotions of the solid crust of the earth, more or less extended.

2. These *movements* are of three kinds, viz :—*vertical*, *horizontal* and *rotary*.

(1) The vertical is an upward movement, often throwing objects to a great distance.

(2) The horizontal, according to Brocklesby, is of a two-fold character, tremulous and undulatory; the first consists of tremblings or tremors of the earth, and the second of wavelike motions and are very destructive. It consists in a rising and falling like the waves of the sea.

(3) The rotary motion consists in twisting objects around without overthrowing them, and is fearful in its effects. The cities of Calabria in Italy and Valparaiso in Chili, suffered severely by this kind of movement;—the former in 1818: the latter in 1783.

3. *Uses of earthquakes.*

(1) Fire and water are two powerful opposing elements. The tendency of the latter is to reduce every thing to a dreary level; the former to break the monotony of the earth's surface by causing variations of elevation. Wisely these two forces are constantly at work, according to a harmonious law.

(2) Volcanic force has made mountains, hills, plains and valleys, while water has reduced the rocks to soil and strewn it over the surface, thus making the earth's surface fit for the growth of plants, and for the abode of man and animals.

(3) Vast treasures of mineral wealth otherwise inaccessible, have been brought to the surface by this powerful volcanic force.

CHAPTER VIII.

WATER DIVISIONS.

1. Water is composed of two invisible gases :—*oxygen* and *hydrogen* ; in weight eight parts of the former and one part of the latter ; in volume one part of the former and two parts of the latter.

2. The water of the earth is divided into three divisions : viz, *land*, *oceanic*, and *atmospheric*. If all the waters of the sea were evenly distributed over the earth they would cover it to a depth of 10,000 feet.

3. A *careless observation* might lead us to think that there is a great waste in this extent of oceans, and that the earth would have been better arranged with three-fourths land and one-fourth water. But it is not so ; our rains come mainly from the sea, and under the present arrangement, there is no more rain on an average than is needed. Increase the area of land and more rain will be needed to fertilize it, and there will be less water area to supply the moisture. To increase the land area could bring nothing but disastrous effects, and a very large per cent. of the land would become desert from the lack of sufficient moisture.

CHAPTER IX.

OCEANIC SYSTEM.

1. An *ocean* is the largest natural division of water. There are five great oceans: viz., the Atlantic, Pacific, Indian, Arctic, and Antarctic. The Pacific is the largest—having an area of about 65,000,000 square miles. The area of the others is as follows: Atlantic, 35,000,000 ; Indian, 30,000,000 ; Arctic, 6,000,000 ; Antarctic, 4,500,000.

2. A *sea* is a large body of salt water smaller than an ocean ; there are two classes of seas.

(1) *Inland* seas are those nearly or entirely surrounded by land ; as the Red sea, and Caspian sea.

(2) *Border* seas are those cut off from the ocean by peninsulas or islands ; as the Arabian and Caribbean seas.

3. A *gulf* or *bay* is a body of water extending into the land.

4. A *roadstead* is a part of the open sea, near the shore, where vessels may ride at anchor in safety.

5. A *harbor* is a sheltered bay or inlet, where vessels may anchor or come to land. Other small inlets are *coves*, *havens*, and *fiords*.

6. A *sound* is a body of water so shallow that its depth can be measured by an ordinary sounding line.

7. A *strait* is a narrow passage of water joining two larger bodies of water. A *channel* is a wide strait.

8. A *bayou* is a stream derived from a lake or a river. In Louisiana, the Mississippi and Red Rivers in the flat regions, send off many such branches to the sea. This term is also applied to tidal channels on the shores of the sea, and is peculiar to the Gulf States.

SALTNESS OF THE SEA.

9. The water of the ocean is salt. This is caused by rivers carrying salt in solution into the sea. No water escapes from the sea except by evaporation; and as only the fresh water evaporates, the salt remains, and in course of time the salt has accumulated.

10. The freshest water in our springs and rivers contains a small quantity of salt, and although in the earlier ages of the earth's development these waters must have been much more salt than now, yet it must have taken many thousands of years to dissolve the salt of the earth and carry it into the sea. About 2.7 per cent. or 27 thousandths of sea water is salt; six-tenths magnesia and one-tenth lime. *Salt lakes* were formed in the same way.

It is not strictly true that no salt escapes by the evaporation of sea-water. It is however but a very small per cent. which passes off with the rising vapors. The rains which fall on the islands of the mid ocean contain sufficient salt, so that the inhabitants need not feed their cattle salt as do the inhabitants on continents far inland.

11. The *quantity of salt* in the sea is simply enormous. Estimating the average depth of the sea at $2\frac{1}{2}$ miles, the salt if abstracted from the sea would cover all North America to a depth of more than 1 mile. It is estimated that there are 200,000 tons of silver in the sea, besides vast quantities of other minerals.

12. The *benefits* arising from the saltness of the sea are important.

(1) The saltness of the waters together with their constant agitation, prevents the sea from becoming corrupt.

(2) Salt water is heavier than fresh and not so easily tossed about by winds. Vessels are thus enabled to carry heavier burdens.

(3) The sea freezes at a temperature of 26° degrees Fah. while fresh water freezes at 32 degrees. Hence, the sea is less icebound than otherwise.

(4) According to Maury, the salts of the sea are among the chief agents in producing ocean currents.

13. *The bottom of the sea* is like the land, consisting of hills, mountains, valleys, plateaus, etc. Geologists tell us much of the bottom of the sea was formerly dry land, such as continents, islands, etc.; that the present continents seem to have been successively dry land and the beds of oceans until the crust of the earth took its more stable and permanent place, as it now appears.

CHAPTER X.

DEPTH OF THE OCEANS, ETC.

1. The depth of the ocean is various. The Indian ocean is generally considered the deepest. A depth of nearly nine miles, is said to have been reached in the north-eastern part by Captain Ringgold.

2. The average depth of the Pacific has been computed to be about 12,000 or 13,000 feet, taken from the velocity of the tide wave.

3. The average depth of the Atlantic is about 2½ miles. The *Telegraphic Plateau* extends from Newfoundland to Ireland; the depth of the Atlantic here ranges from 10,000 to 13,000 feet. Upon this oceanic plateau the first Atlantic cable was laid. The greatest depth of the Atlantic which can be given with any degree of accuracy is 25,000 feet.

All Geographers agree that the three great oceans increase in depth toward the south.

Little is known of the depth of the Arctic and Antarctic.

4. *The color of the ocean* is a deep, rich blue, but in shallow waters it has a greenish tinge. However, the color changes much with the changes of the sky. The color of the sea is said to be due mainly to its saltiness. Fresh water has a greenish tinge, while salt water is blue in proportion to the salt it contains. If very salty it has a redish hue.

5. *In many places the sea* assumes different hues owing to the admixture of foreign matter, as in the case of the Red Sea, so named from the color of its waters due to coloring matter of vegetable origin. A small quantity of the water of the sea seems colorless.

6. *The temperature* of the ocean changes with its depth until a constant temperature of about 39 degrees Fah. is reached. At the oceanic equator this is reached at a depth of 7,200 feet ; at 70° south latitude 39° Fah. is reached 4,200 feet below the surface ; and in about 56° south latitude, the constant temperature exists at the surface.

7. *The oceanic equator* is the line of greatest heat in the waters of the sea. Its highest temperature in 28° north latitude, is about 89 degrees. In the Indian ocean it is about 87 degrees.

8. *The phosphorescent light*, seen in many waters, is caused by small marine animals which have the power of emitting light like the glow-worm or fire-fly.

CHAPTER XI.

MOVEMENTS OF THE EARTH.

1. *The three great movements* of the ocean are tides, waves and currents.

2. *Tides* are the regular risings and fallings of the ocean caused by the unequal attractions of sun and moon.

(1) *Flow tide* is the tide coming in.

(2) *Ebb tide* is the tide going out.

(3) It is *high tide* when the waters have reached their highest point.

(4) It is *low tide* when the waters have reached their lowest point.

(5) When the sun and moon act in conjunction, that is when they are on the same side of the earth or on opposite sides, the tides are higher than at any other time and are called *spring tides*. These tides occur at every *new* or *full* moon.

(6) When the sun and moon are in opposition, that is when one of them is in the horizon and the other in the zenith or nadir, tides are lower than at any other time and are called *neap tides*. These tides occur at first and last quarters of the moon.

TIME OF TIDES.

3. The difference of time between two high tides or between two low tides is about 12 hours and $26\frac{1}{2}$ minutes. The difference of time between two successive spring tides is one-half of a lunar month or a little more than $15\frac{1}{2}$ days.

HEIGHT OF TIDES.

4. The sun's attractive force upon the earth's waters, is to the moon's attractive force as 2 to 5, so that when they act together the waters will rise 7 units, but when they act in opposition the tide will rise but $5 - 2 = 3$ units.

(2) In the middle of the great ocean the tide wave is about $3\frac{1}{2}$ feet. On lakes tides are scarcely perceptible, as they are such comparatively small bodies that all parts are attracted nearly equally.

(3) When the tide wave rushes up bays having wide mouths, the waters are so much crowded together that they sometimes rise to an enormous height by the time they reach the narrow part of the bays at their head.

Such is the case in the bay of Fundy where the tides rise from 70 to 80 feet; within the British channel at Malo, in France, the tide frequently rises to an altitude of 50 feet.

VELOCITY AND DIRECTION OF TIDE WAVES.

5. At the equator the tide waves move with a velocity of 1,000 miles per hour, but diminish toward the poles.

If the earth were covered to a uniform depth with water, the tide wave would move due west, and if there were no friction, or inertia, it would keep directly under the moon.

But owing to the obstructions caused by the land and by the irregularities in the bed of the ocean, tides are deflected out of their normal course and made to flow in all directions. In the Atlantic ocean the tide wave moves nearly north on the coast of North America, and to the northeast near Europe.

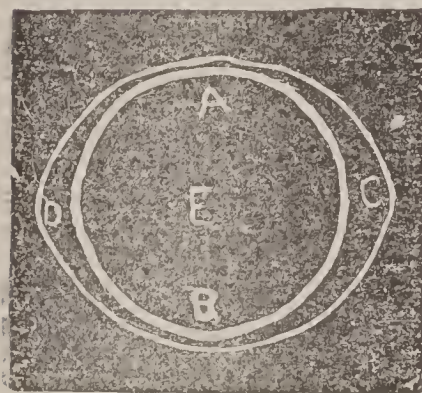
6. *Cotidal lines* are lines drawn upon maps showing what places have high tides at the same time.

7. *A lunar tide* is a tide produced by the moon only.

A solar tide is a tide produced by the sun independent of the moon.

WHY WE HAVE HIGH TIDES ON THE OPPOSITE SIDES OF THE GLOBE.

8. It is perhaps not yet well understood why high tides should occur at opposite points at the same time.



E represents the earth and M the moon.

The solid part and waters on any portion of the earth are equally attracted ; but the solid part will not move, whereas the particles of water are free to move about each other. C being directly under the moon will be more attracted than A and B ; hence, the waters will be drawn away from these two points and filled up around C : again, C being nearer the moon than D, will be more attracted than D ; for the moon's force diminishes as the distance increases. The waters about D, therefore, will be left to a certain extent free to act in accordance with the law of liquids when left free ; (viz., to assume a globular form) and will in consequence pile up around D to a height equal to that at C. The diminished attraction at D is equal to the increased attraction at C.

9. The *origin* of the great tide waves is not far from the southwestern shore of South America.

10. *Derivative tides* are the tides perceptible in the rivers and seas connected with the ocean, inasmuch as they are portions of the great oceanic tide waves. When a tide enters suddenly the mouth of a river abounding in shoals and obstructions, the flow of the waters is called a *bore*.

These tides are well known in the Amazon, Severn and Ganges rivers.

CHAPTER XII.

WAVES.

1. *Waves* are the alternate risings and fallings of the waters of seas, lakes, etc., caused by winds. Waves, unlike tides do not

affect the waters of the sea to the bottom ; but the disturbance extends only along the surface to limited depths.

2. *The highest waves* occur off the cape of Good Hope during a north eastern gale when the waves sometimes rise forty feet above the general level of the ocean. The general height of waves is about 6 feet.

3. *The crest* of the wave is the top; the *trough* is the depression between two successive waves.

4. *The distance between two successive crests* varies from 10 to 20 times their height.

Thus waves 4 feet high have their crests 40 feet apart. Waves 33 feet high, about 500 feet apart.

5. *The velocity* of waves varies with the breadth of the wave and depth of water.

A wave 100 feet broad and in water 100 feet deep moves about 15 miles per hour. A wave 10,000 feet broad and in water 10,000 feet deep moves 154 miles per hour.

6. The force of the highest waves against the rocks along the shore is 6,000 pounds to the square foot. Such a tremendous force we can not comprehend with our limited powers of mind.

7. When the waves roll toward the shallow places so that the bottom of the wave strikes the solid earth, the top of the wave pitches forward and forms *breakers*; and where they extend through a long line of shore, take the name *surf*. After the storm has subsided the billows continue to roll, and are projected far from the scene of the storm. This is called a *ground swell*.

CHAPTER XII.

OCEAN CURRENTS.

1. *Ocean currents* are vast streams of water flowing through the ocean.

ORIGIN.

2. Their origin is attributed to the rotation of the earth ; to the difference in the densities of the waters of the equatorial and polar regions ; to the immense evaporation at the equator ; to tides, winds, melting of polar ice and the like.

3. There are three classes of currents:—*constant*, *periodical* and *local*.

4. Local currents are produced by tides driven through narrow and tortuous channels, as in the Maelstrom of Norway and Roost of Sumburgh, at the southern promontory of the Shetland islands.

5. Currents produced by constant and prevailing winds, are called *drift-currents*.

6. A *counter current* is one that flows in an opposite direction to the main current.

7. Ocean currents are also classified with respect to their position, as *marine* and *submarine*,—the former flowing at the surface and the latter under the surface.

GULF STREAM.

4. The most remarkable and most important of all currents is the *Gulf Stream*. It is a continuation of the Atlantic equatorial current which originates near the equator and flows west from Africa towards America. Passing along the northern shore of South America and into the Gulf of Mexico through Yucatan channel, sweeping in a curve forced by the shape of the coasts of Mexico and the United States, it is finally driven through the narrows of Florida Strait where it receives so great an impetus that its waters are at once quickened into a velocity of five miles an hour, and here receives the name Gulf Stream.

(1) The *velocity* diminishes as the stream flows onward until it reaches a velocity in the northern Atlantic of only two miles per hour.

(2) Its *color* is a dark indigo and is so distinctly marked that the line of separation from the other waters is clearly traced.

(3) Its *width* at the point where it emerges from Florida Strait is less than 50 miles, and in its course grows broader and more shallow until in the far north its breadth is more than 1,000 miles.

(4) Near the southern shore of Newfoundland it is divided by the Grand Bank, and one branch turns to the southeast flowing across the ocean returns to the equator, having made a complete circuit.

(5) Its *temperature* near the coast of Florida at the surface is 86° , that is 9° higher than the surrounding ocean, and in 10° of latitude loses but 2° Fah.

(6) Western Europe owes nearly all it is and ever has been to this remarkable stream. The climate is raised by its genial warmth, 10° above that of America in the same latitude. If it

were possible to change the course of the Gulf Stream, the British Isles would become ice-blocked and as barren and unfruitful as Labrador. Vessels sailing on the bosom of its genial waters always enjoy a summer temperature.

(7) Its influence on the climate of the United States is scarcely perceptible, since the winds blow chiefly from the west; and then again, a cold Arctic current flows between the United States and the Gulf Stream. For many miles it is at the bottom of the Gulf Stream and actually forms the bed on which the latter flows. The meeting of the waters of the latter with those of the Arctic currents near Newfoundland, produces those dense fogs experienced there.

5. The Japan current flowing along the eastern coast of Asia, is a stream very similar to the Gulf Stream. Its velocity varies from 35 to 80 miles per day, being greatest at Yeddo. The temperature is about 12° above that of the surrounding sea.

6. *The North Pacific Drift Current*, the southern branch of the Japan current, skirts the western shores of North America, and by its warmth softens the rigors of this clime. At length it bends to the west and merges into the Pacific Equatorial.

We have neither time nor space to give a detailed account of all or of even the most important currents, together with all the disturbing causes relative to their directions and velocity. It will be observed that the land and irregularities in the floor of the ocean cause deflections in their courses as in the case of tides. The subject becomes an extremely intricate one and entirely too vast for a work purely a school geography.

BENEFITS OF OCEAN CURRENTS.

7. We will conclude by adding a few of the benefits derived from ocean currents.

First—The constant agitation of the waters produced by tides, waves, and currents, prevents the waters from becoming corrupt; otherwise the sea would become a stagnant, fetid expanse, breeding disease and pestilence.

Second—Ocean streams assist in navigation; a vessel sailing in the direction of the stream will add the velocity of the stream to the ship's velocity; thus, quickening the speed and shortening the time of the voyage.

Third—They distribute the heat and cold of the globe. The warm currents carry the surplus heat of the equator to the north mitigating the excessive cold of the polar climes, while the Arctic currents bring their refreshing coolness to the feverish tropics. The whole tendency is to equalize the heat of the earth.

Fourth—Ocean currents have been instrumental in clothing distant isles with a luxurious vegetation, carrying the germs and seeds, and even man, entrusted to them by nature's God, and scattering them to the uttermost parts of the earth.

Nothing which the eye can behold on this earthly sphere shows the goodness and wisdom of the Almighty more than the great oceanic currents. It has all been done for the comfort and happiness of man. Even the sea is made to yield to man's necessities, and under laws given and enforced by divine power it keeps the earth pure and healthful, and makes it a pleasant place in which to live.

"Thanks be unto God for his unspeakable gifts."

8. *Sargossas* are vast areas encircled by ocean currents and covered with sea-weed, sometimes so densely matted as to hide the water. The *Atlantic Sargossa* lies between 20° and 65° west longitude, and between 18° and 28° north latitude.

CHAPTER XIV.

LAND SYSTEMS OF WATER.

1. A *lake* is a body of water surrounded by land, but smaller than a sea.

2. Lakes are both salt and fresh. Lake Superior is the largest fresh water lake; and the Great Salt Lake, of Utah, is the largest body of salt water which is really a lake.

3. There are *four classes of lakes*.

First—Those which have both inlets and outlets. Visible inlets and outlets are meant, as all lakes have inlets and outlets, but not necessarily visible.

Second—Those which have outlets but no inlets. Both these are fresh water lakes.

The great lakes of North America are examples of the first-class, and lake Sirikol, the highest lake in the world and source of the Amoo river situated on Pamir Plateau, is an example of the second-class.

4. Lakes of the *third class* are those having inlets but not outlets.

5. Lakes of the *fourth class* are those having neither inlets nor outlets.

The numerous lakes of the Great Interior Basin are examples of the third class, and lake Tulza is an example of the fourth-class. It is situated in Asia Minor in the Taurus mountains, and is about 30 miles long and $\frac{1}{2}$ mile wide. Lakes of this class as well as those of the second-class are fed by melting snows of mountains and submarine springs.

6. Uses of lakes.

(2) It is a noteworthy fact that comparatively few lakes exist within the tropics; but they become numerous near the poles, where they serve the double purpose of mitigating the rigor of the climate and affording valuable fish, as food.

(2) They are also vast reservoirs of the surplus waters of melting snow, etc., and so prevent disastrous floods.

(3) Lastly—the beauty and charm which they add to the earth must not be overlooked in searching out their uses.

CHAPTER XV.

RIVERS.

1. A *river* is a stream of water flowing in a channel to the sea, a lake, or another river.

2. A *branch* or *tributary* (also called *affluent*) is a stream flowing into another river. The *course* of a river is the general direction in which it flows.

3. Small streams are called *brooks*, *creeks*, *rivulets*, etc.

4. A *river system* is a river with all its tributaries.

5. A *river basin* is the entire area drained by a river system.

6. The *velocity* of a river depends upon the form of its channel, its volume, and the inclination of its bed.

7. The *source* of a river is where it rises; its *mouth*, where it empties into the sea, or any other body of water. *Banks* are the sides of the river.

8. As you go down a river the bank on your right is called the *right bank*; the other, the *left bank*.

9. The *bed* of a river is the bottom, or that over which the water flows. The *channel* is made up of bed and banks.

10. A *delta* is the land enclosed between the mouths of a river. It is so called from the shape of the Greek letter delta (Δ).

DELTAS, HOW FORMED.

(2) Where a river flows through an alluvial region, much soil is washed away and carried by the river to its mouth where it settles to the bottom, forming shoals, islands, and the like. So long as the waters continue to flow, the soil is carried in solution; but on nearing the ocean where there is little fall, the waters become sluggish, and the sediment is strewn along the bottom; in this way many river beds become elevated so much that *banks* or *levees* must be built to keep the waters in the channel.

The surface of the Mississippi river, is already much above the level of the surrounding country in the lower part of its course.

The surface of the river Po near its mouth, is higher than the tops of many houses. Sometimes these rivers break through their banks and do much damage to the surrounding country.

In the spring of 1874 the levees of the Mississippi gave way, when thirty-one parishes of Louisiana were submerged, and great loss of life and property followed.

(3) *All rivers have not deltas*: for when one river empties into another the motion of the waters is kept up and there is no deposit of sediment. Ocean currents flowing by the mouths of rivers, take up their waters and distribute the soil over the bottom of the ocean. The incoming and outgoing tides also take away much of the drift carried down to the sea.

AREAS OF DELTAS.

(4) The *delta of the Nile* contains over 9,000 square miles, and the deltas of the Mississippi measure about 14,000 square miles. The latter is said to carry sediment to its mouth sufficient to cover one square mile each year, 268 feet deep.

11. Usually the surface of a river is but a few feet below the level of the surrounding country; but in a number of instances the rivers have narrow, deep channels many hundreds of feet in depth—these are called *canons*.

The *canon* of the Colorado, of Arizona, is the most remarkable in the world. The surface of its waters is from 2,000 to 6,000 feet below the level of the country.

12. A *water shed* is the elevation or ridge of land separating two river basins.

From this point streams flow in different directions.

13. Sometimes two river systems so run into each other that a natural communication of water exists between them. A stream joining two such river systems is called a *continuous river*.

The Casiquiare river, of South America, joining the Orinoco and Rio Negro rivers, is a familiar example.

14. That part of a river which passes rapidly over rocky obstructions is called *rapids*.

A fall of one foot or more, in the course of two hundred feet, produces rapids.

Where the body of a river pitches over a precipice, it is called a *cataract, fall or cascade*.

CATARACTS.

15. *Cataracts* are found in all quarters of the globe, and are everywhere regarded as phenomena of rare beauty and sublimity. Some are noted for their height, others for their volume of water; but they are most interesting where both these characteristics are combined.

CAUSE OR FORMATION.

(2) In the channels of rivers some rocks are harder than others the softer ones will wear away most rapidly, thus forming the head of *water-falls*, and as the falls become higher the erosive power of the water increases. This continues until stopped by some harder obstruction below.

16. A *firth* or *estuary* is the open, or wide mouth of a river affected by the rising and falling tides.

17. A *canal* is an artificial ditch filled with water, for the passage of boats.

18. All the rivers draining one slope of the country and flowing into the same body of water, is called a *drainage system*.

CHAPTER XVI.

SPRINGS.

1. A *spring* is water issuing spontaneously from the earth, and may be divided into numerous classes.

ORIGIN.

2. The waters on the surface of the earth soak through the soil until they reach an impervious stratum; they run along on

this till they emerge at some lower level where the stratum crops out.

(2) The waters gathering in subterranean caverns, or reservoirs may be forced through openings to the surface of the earth, by compressed gas or highly heated steam, or by the pressure of some connected body of water.

3. The solid part of the earth beneath the surface, is ramified by numerous streams of water, flowing in all directions, like the arteries and veins of the human body. If any of these streams should come in contact with any heated portion of the earth's crust, much of the water is converted into steam, and by its expansive force drives the waters through its channels with much violence, so that vast columns of water are sometimes thrown many feet above the surface of the earth, and are called *geysers*. Where this phenomenon is manifest in a less degree, *warm* or *thermal springs* result.

If the temperature is not above 60° it is called a *cold spring*.

4. Constant springs flow continually with little or no diminution of flow during droughts. *Periodic springs* flow during one season of the year and are dry the rest of the year. If the spring has its origin in a subterranean reservoir whose outlet is a siphon, the spring becomes *periodic*, the ebb and flow of its waters occurring at regular intervals.

6. In many parts of the earth, the crust contains mineral substances which are dissolved by the waters passing through its various strata, and when these waters appear on the surface they are called *mineral springs*.

(1) *Calcareous springs* are those containing lime.

(2) *Silicious springs* are those containing silica.

(3) *Sulphur springs* are those containing sulphuretted hydrogen, and the like.

(4) *Acidulous springs* are those containing large quantities of carbonic acid.

(5) *Petroleum springs* are those containing rock or coal-oil. In this way springs are named from the minerals with which their waters are impregnated.

(6) *Artesian wells*, so called from *Artesia*, a district of France, where the first well of this kind was sunk, are made by artificial borings through the crust of the earth until a reservoir of water is reached whose source is higher than the surface at the point of boring.

The water is made to rise through the opening to the surface of the earth and is often thrown in a continuous jet with considerable force.

CHAPTER XVII.

METEOROLOGY.

1. *Meteorology* is a description of the atmosphere and its phenomena.

2. *Atmosphere*, the third grand division of the globe, is the elastic gaseous substance which envelops the earth to a height of about 50 miles.

3. The air becomes less dense as the distance from the earth increases. At the sea-level the pressure is about 15 pounds to the square inch. The barometer falls one inch in 1,000 feet, in the first 10,000 feet of ascent; and $\frac{2}{3}$ of an inch per thousand feet during the next 10,000 feet.

4. The air is composed of two invisible gases: viz.,—*nitrogen* and *oxygen*,—in volume about 79 parts of the former to 21 parts of the latter.

Wind is air in motion.

VELOCITY OF WINDS.

5. The following table partly from Smeaton will be found useful:

Velocity of wind in miles per hour. Force of winds to the square foot, in avoirdupois pounds. Common names of winds.

1		Hardly perceptible breeze.
4 to 5	.08 to .123	Gentle wind.
10 to 15	.492 to 1.1	Pleasant, brisk gale.
20 to 25	1.96 to 3.07	Very brisk.
30 to 35	4.42 to 6.02	High wind.
40	7.87	Very high.
50	12.3	Storm.
60	17.71	Great storm.
80	31.49	Hurricane.
100	49.2	Violent Hurricane.

6. When the winds have a rotary as well as a progressive motion, they are called *whirl-winds*, or *tornadoes*.

A *cyclone* differs from the preceding only in its larger area.

7. *Cyclones* are the most dreaded of all storms, but tornadoes are nearly as destructive as cyclones. When a hurricane occurs on the water, it causes a *water-spout*.

CAUSE OF WINDS.

8. When any portion of the earth becomes heated more than the adjoining districts, the air over the heated area expands, and the cooler air being heavier comes in to push the heated air up, which in turn flows back over the cooler regions.

(1) Winds are turned out of their courses by opposing mountains, and lesser elevations, also by conflicting currents of air.

(2) If the earth's surface were perfectly flat the winds from the equator, owing to the rotation of the earth, would take north-easterly and south-easterly courses; and the winds from the polar regions would blow south-west from the north and north-west from the south pole.

EXPLANATION—The equator has a velocity of about 1000 miles per hour, and the velocity of any spot diminishes as we go north or south of the equator until we reach the poles where the rotary velocity is zero.

The atmosphere at the equator has a velocity of the equator, and in going north the winds are continually coming into regions having a less velocity than themselves; and hence, since the air moves faster east than the earth, the winds are made to take a course between north and east, or north-east. In like manner the winds from the equator moving south, take a south-easterly course.

(3) If the earth did not rotate on its axis, the warm winds from the equator would blow due north and south; also the winds from the polar regions would blow due south from the north pole, and due north from the south pole.

The winds coming from the polar regions are continually coming into regions having a greater velocity eastward than themselves, and hence are made to lag behind; that is, the earth slips through under them giving them a relatively westerly direction. Suppose the winds blow east 20 miles per hour, and you are riding on a railway train moving 30 miles per hour in the same direction, the winds will seem to blow west at the rate of 10 miles per hour. The earth may be represented by the train, and the velocity of the train being greater than the winds causes the winds to seem to blow west; so the velocity of the solid part of the earth being greater than the incumbent air makes the winds to blow westerly.

The subject of winds is a very complicated one when followed out in detail; and as we give a detailed account of each country where winds are treated more fully in connection with these countries, we shall make only a general statement here of the subject. We will be content here in defining, or describing a few well known winds.

CHAPTER XVIII.

CLASSIFICATION OF WINDS.

Winds may be classified as follows.

Winds	1. Constant—	Trade winds.
		1. Monsoons.
		2. Sea breezes.
		3. Etesian.
		4. Northeris.
	2. Periodical	5. Harmattan.
		1. Simoons.
		2. Sirocco.
		3. Pamperias.
		4. Mistral.
	3. Variable	5. Bora.

1. *Trade winds* are formed within the tropics and blow in one direction (westerly) throughout the year.

(1) They are so called because they assist in navigation: a vessel on the sea can have its speed quickened by getting into a trade wind blowing in the same direction.

(2) The *north-east* trades lie between the 30th and 8th degrees north latitude, and the *south-east* trades lie between the 3rd north latitude and 28th south latitude.

(3) Their velocities are from 10 to 20 miles an hour. Between these two trades lie the *zone of calms*, caused by the vast volumes of heated air continually rising. The air is mostly in dead repose.

(4) About the tropics there are two other calm belts caused by the equatorial winds descending and meeting the polar winds. The calms of the tropic of Cancer, are called *Horse Latitudes*, from the fact that formerly vessels loaded with horses for the West Indies, were often delayed in these calms and the sailors were obliged to throw overboard a part of their cargo to save the rest from the want of food and water.

PERIODICAL WINDS.

2. Periodical winds are those which occur at regular intervals of time and continue for a definite season.

(1) *Monsoons* are winds which blow one-half year in one direction and during the remaining half, in the opposite direction. From October to April the north-west monsoon prevails in the southern hemisphere, and the north-east, in the northern. From April to October they blow in opposite directions.

(2) *Land breezes* are winds from the land blowing over the sea ; *sea breezes* are winds from the sea blowing over the land.

During the day the land becomes much more heated than the water and, because of the hot air over the land rising, a breeze sets in from the sea, usually about 9 o'clock in the morning, and continues until sunset. Since the water is a poor conductor of heat, the land cools much more rapidly than the water so that early in the evening the land has become cooler than the sea, when the warmer air of the sea is crowded out by the cooler breeze from the land.

Between these winds there is a season of calm.

(3) *Etesian winds* are north-east winds experienced in some countries on the Mediterranean ; they blow for nearly six weeks.

(4) *The northers* are the cold boisterous winds blowing over the plains of Mexico and Texas from October to March ; but seldom continuing for more than four or five days at a time.

(5) The Harmattan is found in Guinea and Senegambia, and blows from December to March, in four different intervals of about 15 days each. It is an exceedingly hot and dry wind, and the sky is so hazed that the sun appears like a ball of fire.

VARIABLE WINDS.

3. North and south of the trades are the zones of *variable* winds ; that is, as the name indicates, winds which blow in any direction.

(1) *Simoons* are the hot parching winds from the desert of Sahara.

(2) *The sirocco* is a south-east wind which occurs in Sicily and Italy during the summer. They come from the Great Desert over the Mediterranean, are humid and hot, and exceedingly oppressive.

(3) The *pamperas* are the cold north-west winds from the Andes which sweep over the dry pampas of South America. So great is their violence that often great clouds of dust are raised which produce a darkness like night, and the water of the La Platta rolls in billows like the sea.

(4) The *mistral* is a cold north-west wind sweeping down from the mountains in Central France over its south-eastern regions.

(5) The *Bora* is a cold north-east wind from the Alps.

USES OF WINDS.

1st—They purify the atmosphere.

2nd—They distribute the heat and cold over the earth, else many parts would become intolerable because of the excessive heat and cold.

3rd—They distribute the rains.

4th—They carry seeds to distant countries and islands, and thus have been the means of clothing many portions of the earth with a rich garb of vegetation.

5th—They assist in navigation by driving ships across seas and other large bodies of water.

It has been beautifully said : "By their aid the rich products of different climes are interchanged, mankind are bound together by social and commercial ties, and religion and civilization are extended to the remotest regions of the earth."—*Brocklesby*.

6th—It is true that sometimes winds in the way of storms do a great deal of damage : but they bring so many blessings and so many comforts that we could ill afford to do without them. We are glad to suffer slight damages occasionally, if we may only enjoy the thousands of benefits they confer.

CHAPTER XIX.

TEMPERATURE.

1. The *temperature* of any thing is the amount of heat it possesses, and is measured by an instrument called a *thermometer*.

2. The *mean daily temperature* is found by taking the temperature of each hour and dividing this sum by 24. The *mean yearly temperature* is found by taking the daily temperatures for a year and dividing their sum by 365.

3. The *climate* of a place is the conditions of the atmosphere as to winds, moisture and temperature : or in other words, climate is the *weather* conditions of a country.

4. The climate of a place depends upon its latitude, altitude, proximity to the sea, position and direction of mountain ranges, direction of prevailing winds, ocean currents, cultivation of the soil, etc.

For every 330 feet in ascent there is an average diminution of 10° in temperature.

(1) The *astronomical climate* of a place is the climate resulting from conditions depending on its latitude.

(2) The astronomical climate modified by other conditions, is called *physical climate*.

(3) A *continental* climate is characterized by great extremes and sudden changes of temperature, and prevails in large land areas : as, in the interior of Asia, North America, etc.

(4) An *oceanic* climate is the opposite of the preceding : there is great uniformity in daily temperature and but comparatively little difference between the summer and winter temperatures. It prevails on islands and along the coasts of continents.

5. *Climatic circles* are lines connecting places having the same average temperature.

(1) *Isothermal lines* connect places having the same average annual temperature.

(2) *Isocheimal lines* connect places having the same average winter temperature.

(3) *Isotherel lines* connect places having the same average summer temperature.

6. From the preceding it will be observed that *climate does not vary* as latitude varies, owing to other modifying conditions. It is frequently the case that north of a chain of mountains the climate is warmer than immediately south of it.

7. The *hottest* part of the globe surrounds the Red Sea, whose mean annual temperature is 90° Fah. The coldest places are in north-eastern Siberia, and Melville Island of North America. The latter has a mean temperature of 3° below zero. The former 1° above zero.

8. The climate of the north Temperate zone is warmer than the south Temperate, owing to a greater amount of land in the North : for the same reason the *isothermal equator*, or line of greatest heat lies north of the equator.

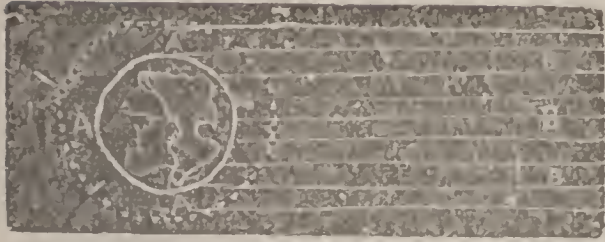
9. The hottest time of the year is *not* when the longest day occurs, but about the latter part of July and first of August.

While the days are longer than the nights, the earth receives more heat during the day than it loses during the night : there is then an accumulation of heat which does not cease (in our latitude) until about the middle of August. From this time the earth radiates more heat during the night than it receives during the day and continues to grow colder until about the middle or latter part of February.

10. The hottest time of day is not at noon, but from one to two o'clock P. M. It is warmer at nine o'clock P. M. than at three A. M., because the earth having become heated during the day continues to lose heat during the night.

So long as the earth receives heat faster than it radiates it, it continues to grow warmer.

11. The climate grows colder as we go from the equator toward the poles.



a a a—The earth's atmosphere. *b b b*—The sun's rays.

(1) The sun's rays must pass through a greater thickness of atmosphere near the poles than at the equator. About 28 per cent. of the sun's heat is lost in passing perpendicularly through the atmosphere, and, of course, much

more will be lost in passing through the atmosphere nearer the poles.

(2) Owing to the round shape of the earth fewer rays fall on any given area near the poles than at the equator; hence, less heat.

(3) North and south of the equator the sun's rays strike the earth obliquely, and since the angle of reflection is equal to the angle of incidence, the rays glance off again into space depriving the earth of much heat which it would otherwise receive; whereas, in the equatorial regions, where the rays of the sun fall perpendicularly they are reflected back into the atmosphere in the same line, and so help much in this way to heat these regions.

12. *Climatic zones* or *physical zones* are divisions of the earth's surface bounded by isothermal lines. There are five of these zones. The *torrid* lies between the isothermals 70° north and 70° south. The *temperate zones* lie between the isothermals 70° and 32° . The *frigid zones* lie the one north, and the other south of the isothermals 32° .

CHAPTER XX.

MOISTURE OF THE ATMOSPHERE.

1. The atmosphere always contains some moisture in an invisible state. A vessel of water exposed to the air soon evaporates and its waters are held by the air.

2. The air expands as its heat increases, and its capacity for moisture increases with its heat. When, at any given temperature, the air has all the moisture it can hold in an invisible state, it is said to be *saturated*. This is also called the *dew point*. Whenever saturated air is made cooler, dews, fogs, mists and rains result.

3. The *quantity of moisture* necessary to saturate the air varies with the temperature. Cold air requires much less moisture to saturate it than warm air. Warm air when not saturated may be brought to the dew point by cooling.

4. *Dew* is the moisture which gathers upon vegetation and many other objects during the clear summer nights.

(1) During the day the earth and superincumbent air become heated by the sun's rays; but during the evening and night the earth loses its heat so rapidly by radiation, that it soon reduces the temperature of the air resting upon it, to the dew point and below it. When the temperature of the atmosphere is brought below the dew point, it can no longer hold all its moisture and a portion gathers on the objects with which it is in contact.

(2) A cloudy night is not favorable for the deposition of dew, as the clouds arrest the radiation of heat which is necessary to bring the temperature below the dew point.

(3) No dew is found on the under side of leaves for they receive the heat radiated from the earth.

(4) The most copious dews fall not during a very calm night, but when the air stirs slightly. The same air resting upon an object would soon be drained of its surplus moisture.

(5) No dew falls on very windy nights.

(6) In the tropics during their cloudless nights, the dew is so copious that it resembles gentle rains, and the water is made to run in streams.

5. Whenever the temperature of a large mass of air is reduced below the dew point the moisture begins to collect in minute drops, which become visible: it is called *fog* if it rest or floats upon the surface of the earth; if it floats in the higher regions of the atmosphere it is called *clouds*.

6. The following are the principal varieties of clouds.

(1) The *cirrus* is a feathery, fleecy cloud which floats in the regions of perpetual frost. It is supposed to be composed entirely of snow-flakes.

(2) The *cumuli* are the heavy massive clouds, which look like snowy mountains. They are the prevailing clouds of our summer days and are formed by uprising heated currents of air. Their base marks the height where the dew-point is reached.

(3) The *stratus* is a winter cloud, though also common at other seasons, and is generally low. It is arranged in long horizontal bands, and is formed low in the atmosphere.

(4) The *nimbus* is the rain-cloud. It is noted for its ragged outline: at first it is of a dark leaden color gradually changing into gray.

(5) There are also other varieties of clouds, mixtures of the foregoing, such as the *cirro-cumulus*, *cirro-stratus*, and *cumulus-stratus*.

(6) The height of clouds varies, on an average, from 1300 feet to about five miles.

USES OF CLOUDS.

The use of the nimbus or rain-cloud is apparent; but it may be asked of what use are clouds that do not bring rain.

1st.—They protect the earth from too much heat in summer and from excessive cold in winter. During the summer they cut off the burning rays of the sun, and in winter they act as a covering to the earth, and thus prevent the too rapid radiation of heat.

2nd.—If you will watch the fleecy clouds during the summer days, you will observe that clouds are formed in one part of the sky and melt away in another, reform and dissolve again. In all these changes heat is given off, or absorbed. When a cloud is dissipated by the heat of the sun, heat is abstracted from the surrounding air, and a cooler current descends toward the earth; and when a cloud is forming in another part of the heavens, heat is set free and the air rises.

In this way vertical currents of air are produced and the temperature equalized.

3rd.—In searching out the uses of clouds, the beauty which they add to the sky must not be overlooked.

The constantly varying changes of the sky fills our minds with thoughts of the beautiful. A sky forever without clouds would certainly become monotonous. The exquisitely beautiful colors of clouds at sunrise and sunset, have always been objects of profound interest and admiration to all persons.

When the temperature of saturated air is reduced very rapidly *rain* falls from the clouds. Very small drops of water by a slower cooling, forms mist.

Perhaps, cooling and compressure by other bodies of air cause rains, much as water is pressed out of a sponge. It is possible that scientists have not yet arrived at the true cause of rains.

AMOUNT OF RAIN-FALL.

7. It is estimated that the annual rain-fall in the torrid zone is 8.5 feet, in the temperate zone 3.03 feet, and in the frigid zone 1.25 feet. This amount would cover the earth, on an average, to a depth of about five feet, and would make a lake 24,000 miles long, 3,000 miles wide, and 16 feet deep.

The greatest annual rain-fall occurs at the southern base of the Himalaya mountains in India: about 600 inches.

At San Luis de Maranhao 280 inches fall annually.

Amount of annual rain-fall in the Old World, 77 inches.

Amount of annual rain-fall in the New World, 115 inches.

Amount of annual rain-fall in the United States, 39 inches.

Amount of annual rain-fall in Europe, between 36° and 60° , is 34 inches.

8. If the dew in forming should freeze, it is called *frost*.

If, in the process of rain-formation in the upper regions, the drops should freeze into many sided crystals or flakes and thus fall to the earth, we call it *snow*. The small drops of frozen water pop out into snow flakes, like the popping of corn.

9. The *snow line* is the height where snow ceases to melt. The tops of very high mountains are always covered with snow. The snow line is about 16,000 feet above the sea-level at the equator and slopes north and south toward the poles, where it reaches the surface of the earth. In our latitude it reaches a height of 10,000 ft.

10. *Hail is produced* when there is great difference of temperature between lower and upper strata of air.

The cause of hail is perhaps not yet fully understood: several theories have been advanced to account for these wonderful occurrences. If you examine a hail-stone you will find it composed of concentric layers similar to those of an onion, arranged around a central nucleus of ice or snow, generally the latter. The *rotary theory* which is the most generally accepted explains this as follows: The wind is supposed to rotate in a cyclone, only the axis is horizontal to the surface of the earth. Two currents of air—one cold, and the other warm and humid, the warm stratum being below—meet and produce this rotary motion. A snow-flake being formed is carried down into the moist, warm air where it receives a layer of moisture and then back into the cold when it is frozen. This process alternates in cold and in warm moist air until layer after layer being added, it becomes too heavy to be held or carried by the rotating air, and is then thrown to the earth.

11. *Glaciers* are immense masses of ice and snow which move slowly down the valleys and gorges of mountains. The upper part is formed of soft snow, the lower part of clear ice.

It is formed by the freezing and thawing of snow. Its motion is produced by the immense weight of snow and ice in its upper course and by the alternate thawing and freezing. In the polar regions these glaciers shove out from land into the ocean, and under their excessive weight break off, plunge into the water, float in the ocean, and then are called icebergs.

12. An *avalanche* is a great mass of snow sliding down the mountain side, often carrying ruin and devastation in its course. It is sometimes called the *thunderbolt of snow*.

CHAPTER XXI.

OPTICAL AND LUMINOUS PHENOMENA.

1. The *rain-bow* is an arch composed of seven prismatic colors: viz., red, orange, yellow, green, blue, idigo, and violet. The

rain-bow is to be seen only when the rain is falling and the sun is shining.

It is formed by the rays of the sun passing through the drops of water, when they are dissolved into their prismatic colors. Each color is reflected at a different angle, hence the arch of the rain-bow and its distinct colors.

2. *Twilight* is the faint light seen after sunset and before sunrise. The former is called the *evening twilight* and the latter the *dawn*.

CAUSE OF TWILIGHT.

(1) The cause of twilight is the reflection of the sun's rays by the atmosphere. The same power of reflection possessed by the atmosphere causes it to be light in our recitation rooms, on the shady side of the house, and on cloudy days.

REMARKS.—If the atmosphere did not possess the property of reflection, day would come upon us like a flash of lightning and would leave us as instantly; our own shadows would be in our way, for we could not see through them. Every spot where the direct rays of the sun did not reach would be dark as the deepest dungeon; every shadow would be a dark partition through which we could not see. Our eyes could not endure the sudden changes forced upon them. In fact the earth would be almost anything but agreeable. We see here, as everywhere, design wrought out in the mind of the Infinite, and that the allwise and ever kind Creator has done everything for our comfort and happiness. In grateful homage due Him, let us praise Him for His excellent works.

3. *Mirage* is a name given to that optical phenomenon by which objects are seen above and below their true position. It is common on the Sahara.

4. The *Aurora Borealis* is a luminous phenomenon of electric origin, seen in the northern skies. In Iceland and other northern countries it is an object of rare beauty.

5. *St. Elmo's Fire* is the pale light, sometimes attended by hissing noises, seen at the tips of objects during a highly electrified condition of the atmosphere.

6. *Lightning* is a discharge of atmospheric electricity, accompanied by a vivid flash of light.

7. *Thunder* is the noise made by the electricity in passing through the air. The lightning-flash in passing through the air produces a sudden and powerful displacement of the particles of air, and the collapse is said to give the report called thunder.

CHAPTER XXII.

THE THREE KINGDOMS OF NATURE.

1. The unorganized portion of the earth belongs to the *mineral*

kingdom. This furnishes sustenance to vegetables, and vegetables are the chief nutriment of animals.

2. Among the mineral treasures of the earth, coal is the most important. Next to that are the various *metals*, iron, lead, tin, copper, zinc, nickel, gold and silver. The last two are called *precious metals* in distinction from the others which are called the *useful metals*.

3. There are four *principal classes of minerals*:—the metallic, the inflammable, precious stones, and building stones. We have named the metallic.

The most important inflammable minerals are coal, sulphur, bitumen, asphaltum.

The most important precious stones are, diamonds, sapphires, rubies, emeralds, topaz, etc.

Some of the principal building stones are granite, limestone, marble, and sandstone.

VEGETATION.

4. The empire of vegetation embraces the whole globe from pole to pole, and from the summit of mountains, where the lichen creeps over the hardest rocks, to the bottom of the ocean, where floating fields of plants rise unseen. Cold and heat, light and shade, fertile land and pathless desert—every place, every temperature, has its own kind of vegetation, which thrives and prospers there. There are plants which ramify upon the dark vaults of mines, and upon the walls of deepest caverns.

(1) Among the most important vegetables are *grains* which furnish bread; *cotton*, which furnishes clothing; sugar tea, coffee, and spices, which supply us with luxuries. Ships, as well as a large part of our houses and furniture, are built of vegetable materials. Directly or indirectly, all animal life depends upon vegetable products.

ANIMALS.

5. The animal kingdom presents a vast and varied field. Every department of nature—the earth, air, and sea,—is full of animated beings; some of them seeming nearly allied to vegetables and minerals. From these we may ascend in the scale through an almost infinite series of existences, up to man, who constitutes the highest in the animal kingdom.

CHAPTER XXIII.

MAN.

1. The various races of men may be reduced to *five principal races*, or *types*. These all differ from each other in color, form, and feature.

2. *The distinction of the different races* is, probably, owing to difference of climate, food, manner of living, and, no doubt, to causes we do not fully understand.

3. The five varieties of the race are the *Caucasian*, the *Mongolian*, the *African*, the *Malay*, and the *American*.

4. The *Caucasian* is so called because Blumenbach's best specimen skull was obtained near the Caucasus mountains: it is also called *Indo-European*, from its diffusion from India over Europe.

(1) *Physical Characteristics*:—The Caucasian race is distinguished for a white skin varying to swarthy, a ruddy complexion, soft flowing hair, oval face, narrow nose, small mouth, and for round and well proportioned limbs. He is the tallest of the five races of men, and has always been foremost in intelligence, the arts, and in all the intellectual pursuits. The principal nations of ancient and modern times have been of this race.

(2) The principal nations embraced under this class are the Europeans and their American descendants, the Arabs, Moors, Turks, Hindoos and Abyssinians. Whole number about 600,000,000.

5. The *Mongolian* race includes all the nations in Asia east of the Ganges, excepting Malacca. It embraces, also, the Laplanders and Fins in Europe, and the Esquimaux of America, from Behring's strait to Greenland.

(1) It is distinguished for a yellow skin, thin, coarse and straight hair, broad and flat face, square head, low forehead, high cheek bones, small and obliquely set eyes, thick lips and scanty beard.

(2) On the whole the Mongolians are inferior to the white race in intellectual endowments and are lower in stature, and feebler of body than the other races. They are ingenious and inventive in detail, but lack the ability to generalize. They number about 590,000,000.

6. The third race is the *African* or *Negro*, which is spread over all Western and Southern Africa. It is found also upon the coasts of Madagascar, and occupies New Guinea, New Caledonia, and includes the natives of Australia, and the negroes of America.

(1) The *physical characteristics* are black skin, black woolly hair, low forehead, high cheek bones, thick lips, broad flat nose, projecting jaws, and curved shin.

(2) They have thus far evinced less mental activity and intellectual capacity than the preceding races, though a few have risen to a considerable eminence. In their native state they are indolent, and sluggish in their natures, and brutal in their manners. Their number is about 185,000,000.

7. The *Malay race* possesses many of the features of the first two mentioned races : a high and round head, brown color, hair black and straight, short and robust in stature, the men being on an average five feet two inches in height, broad face and high cheek bones.

(1) This race inhabits Malay Peninsula, the East India Islands, Polynesia and New Zealand. It numbers nearly 55,000,000.

8. The *American race* consists of aboriginal inhabitants of America, and is distinguished for its reddish or copper color, high cheek bones, erect form, coarse, straight and black hair, small, black and deep set eyes, aquiline nose, low and retreating forehead.

(1) The American Indians are savage and revengeful in their dispositions, fond of war and hunting. They are capable of noble and generous feelings, but are cruel and revengeful toward their enemies, and exhibit a wonderful endurance of pain and suffering. They are rapidly disappearing as the white man, with his superior intelligence, encroaches upon their domain. They number, perhaps, 11,000,000 souls.



CHAPTER XXIV.

THE CAUCASIAN RACE.

1. This race is divided into three great branches,—the *Hamitic*, *Semetic*, and *Japhetic*, or *Aryan*.

2. The *Hamitic*, also called the *North African branch*, includes the Fellahs of Egypt, the Berbers of North Africa, and some of the inhabitants of Soudan. The people of this branch have mostly disappeared or have become blended with the Semetic and Japhetic so as scarcely to be distinguished.

3. The *Semetic* branch includes the Jews, Arabs, and Syrians. The former are scattered through every country of the globe, as has been prophesied of them.

4. The *Japhetic* or *Aryan branch* embraces six divisions : viz., the Russian, Hindoo, Germanic, Slavonic, Romanic, and Celtic.

The Germanic nations are those derived from the ancient Germans : the Romanic, from the ancient Greeks and Romans : and the Celtic from the ancient Celts.

5. The *Aryan branch* is supposed anciently to have occupied the fertile valleys of the Hindoo Koosh mountains : that a portion of them emigrated westward. One division settled in Central Europe, from which descended the Germans, the Celts, and Slavonians : another division settled in Southern Europe and gave birth to the ancient Greeks and Romans.

6. The following classification will indicate the principal divisions of the Caucasian race.

Caucasian	1. Hamitic	{ 1. Fellahs of Egypt.	
		{ 2. Berbers of North Africa.	
		{ 3. Some inhabitants of Soudan.	
	2. Semetic	{ 1. Jews.	
		{ 2. Arabians.	
		{ 3. Syrians.	
	3. Aryan.	1. Persians.	1. English.
			2. Germans.
			3. Dutch.
		2. Hindoos.	4. Swedes.
			5. Norwegians.
			6. Danes.
		3. Germanic	1. Modern Greeks.
			2. French.
			3. Italians.
		4. Romanic	4. Spanish.
			5. Portuguese.
			1. Welsh.
	5. Celtic	{ 2. Irish.	
		{ 3. Scotch.	
		{ 1. Russians.	
	6. Slavonic	{ 2. Poles.	

CHAPTER XXV.

PHYSICAL AND POLITICAL GEOGRAPHY COMPARED.

1. Geographical topics are frequently viewed under a division into *physical* and *political*.

2. In looking round upon the earth, we notice that the mountains and valleys, the lakes, seas and oceans are the works of God,

or nature. We observe that cities, roads, ships are made by men, united into political society. Geography is therefore divided into two parts—*natural*, or *physical geography* which describes the works of nature : and *political geography*, which describes the works and institutions of men in their social capacity.

3. *Physical geography* describes the soil, climate, mountains, rivers, and seas of different countries.

Political geography describes the people of different countries, their condition, and their works.

It describes the government, religion, degree of civilization, modes of building, dress, and traveling : their roads, railroads, canals, towns, cities, villages ; their trade and commerce : their manufactures, agriculture, and other industrial occupation.

4. The earth was created by God to be the abode of myriads of happy creatures, but more especially to be the theater upon which man is to prepare for a future and an immortal existence.

5. The various objects on the earth are divided, by naturalists, into three classes, or kingdoms : The *mineral*, including the soils, rocks, waters, and all unorganized substances : the *vegetable*, including trees, plants, and shrubs ; and the *animal*, including all beings which live, feel, and move.

6. Vegetables draw their substance from the mineral kingdom, and thus prepare food for animals. Man stands at the head of the animal creation, and freely makes use of all he finds on the earth, that may contribute to his happiness. This privilege is given him by his Creator, and he enforces it by his superior skill and wisdom.

7. Animals are endowed with instincts, which guide them in the pursuit of happiness : but man must reach his maturity and perfection by means of education. Uneducated man is a savage.

8. A chicken will run about, and pick up seeds, when a day old ; a duck will swim as soon as hatched ; a calf or lamb will walk about and take its milk from its mother, without help or instruction, in twelve hours after birth.

9. But an infant is the most helpless of beings. It must be taught to eat, to drink, and to walk. Without education man grows up rude and cruel ; with it he may become an enlightened being, acquainted with many sciences, and familiar with his duty here on earth, and his high destiny hereafter.

POLITICAL GEOGRAPHY.

CHAPTER I.

STATES OF SOCIETY.

1. Mankind is found in various stages of civilization. Some live chiefly by hunting, fishing and on the spontaneous productions of the ground ; they have no knowledge of books, no schools, no well defined form of government and are generally blood-thirsty, cruel and revengeful in their disposition, and treat their women as slaves. This is called the *savage state*. The best examples of this class are the Indians of America, the aborigines of Australia, New Guinea, and many parts of Africa.

2. The *barbarous state* is a state higher than the savage. The people of this class live by agriculture and the pasturage of cattle and sheep : they roam about from place to place in search of pasture for their flocks ; they understand a few of the most simple arts, and have a very limited knowledge of reading, and writing.

3. The *half civilized* nations obtain their living chiefly by agriculture, commerce, and some of the arts which they understand tolerably well. They have also established laws and religion, and some schools. China, Japan, Persia and many other countries of Asia belong to this class.

4. The *civilized state* is a decided improvement upon the half civilized. Here the principles of government are tolerably well understood : the people live in good houses, and have superior institutions for the diffusion of knowledge. The arts and sciences are much cultivated ; there is, however, a great difference between the upper and lower classes of society. Among the nations of this class are Mexico, Spain, Portugal, Italy, Greece, etc.

5. The *enlightened nations* are noted for the intelligence, industry and enterprise of their inhabitants : the arts and sciences are here carried to a high state of perfection : females are treated with politeness ; the principles of free government are well under

stood, and education is more general than among other nations. The United States, Great Britain, Germany, France, Switzerland are the best examples of this class.

CHAPTER II.

GOVERNMENT.

1. The surface of the earth is occupied by different nations, and these are found in very different conditions as to government; some adopting one kind, and some another.

2. *Government* is that system, or power by which the laws of a country are made and executed.

(1) The *object* of government is to afford protection to life and property, and to insure the happiness of the people.

3. Every government exercises three functions : viz., the legislative, judiciary and executive.

(1) The *legislative function* consists in framing laws.

(2) The *judiciary function* consists in applying the laws to individual cases. It is vested in our courts of justice.

(3) The *executive function* consists in enforcing the laws. This power in our country is given to the chief executive of the United States.

A government is prosperous just in proportion as these several functions are faithfully exercised. It matters not how large or how small the government, all these departments are applied. In the school room the teacher exercises all these, the parent in his family, and so on.

4. There are *three forms* of government ; monarchy, democracy, and aristocracy.

(1) A *monarchy* is a government where the emperor or king rules during his life.

(2) If the government is limited by law it is called a *limited* or *constitutional monarchy*, like that of England.

(3) Where the monarch rules according to his own will, it is called an *absolute monarchy*; as, in Russia, China, and Turkey.

(4) An *aristocracy* is a government where the power is vested in the hands of a few persons called nobles. This form of government does not now exist alone, but is frequently combined with other forms of government. In Great Britain, the king or queen represents the monarchy ; the nobles in the house of lords represent the aristocracy ; the house of commons, the democracy.

5. A *democracy* is a government in which the power is in the hands of the people at large.

(1) In a pure democracy all the people meet together to make their laws ; this form of government was common among the early colonies, but in course of time the population increased and

was scattered over large areas so that it became impracticable to meet in a vast general assembly, besides great confusion would follow in so vast a concourse of people: different sections of the country then sent men whom they chose to represent them and their wishes, in the colonial legislatures: the government was thus changed from a pure democracy to a *representative democracy*, or *republican form of government*.

6. The first kind of government was the *patriarchal*, in which the father ruled his own family and servants.

The Bible records the names of many patriarchs, among whom were Abraham, Isaac, Jacob, Noah, etc. This kind of Government still exists among the rude and barbarous tribes, the Bedouins of Arabia and the Great Desert, the Laplanders, and some others.

7. An *empire* is a country governed by an emperor.

(1) *Empires are generally composed* of countries immediately joining each other, forming a compact body; as, the empire of Germany; in other instances empires are composed of countries situated in different parts of the earth; as, the British Empire.

(2) A *kingdom* is a country usually governed by a king or queen; as, Spain, Italy, etc. A kingdom differs from an empire in not being composed of separate and distinct states forming a whole.

Prussia is a kingdom; at the close of the late war with Austria, when many of the smaller States of the Germanic confederation were joined to her and consolidated, the confederacy became an empire.

8. A *duchy* is a small division of a country governed by a duke; or, it is the dominion of a duke.

9. A *principality* is a country which gives title to a prince. Prince Albert, heir to the throne of England, is Prince of Wales.

10. A *despotism* is an absolute monarchy.

11. An *oligarchy* is a government by a few.

12. The *capital* of a country is the seat of government where the legislative bodies meet, and where the principal officers reside. A central position is usually chosen for a capital.

13. *Capitol* means the government building in which the legislative bodies meet: it also contains many offices, such as the treasurer's office, clerk's office, etc.

14. A *city* is a large collection of houses and inhabitants. Cities are usually incorporated with peculiar privileges in being governed by aldermen, mayor, etc.

15. A *town* is smaller than a city and has fewer municipal privileges. A *village* is smaller than a town: many villages are incorporated, and are governed by a mayor and council.

Cities are divided into different classes and are endowed with privileges according to their rank.

Each state designates what shall be a city of the first-class, second-class, &c., within its limits.

In Ohio a city of the first-class has 31,500, or more inhabitants ; second-class, from 5,000 to 31,500.

Cities of the first-class are divided into three grades :

First grade, more than 200,000.

Second " " " 90,000, and less than 200,000.

Third " " " 31,500, " " " 90,000.

Second-class cities are divided into four grades :

First grade more than 30,500, and less than 31,500.

Second " " " 20,000, " " " 30,500.

Third " " " 10,000, " " " 20,000.

Fourth " " " 5,000, " " " 10,000.

The great cities of the earth may be classed under three divisions : cities of the first-class containing 1,000,000 or more inhabitants ; second-class, from 500,000 to 1,000,000 ; third-class, from 300,000 to 500,000.

16. A *seaport* is a city or a town situated on some harbor where vessels can load and unload their cargoes.

17. A *port of entrance* is a city or town with which foreign vessels are allowed by law to trade and where duties are assessed and collected.

18. The *metropolis* of a country is its chief city.

19. A *colony* is a portion of a country settled by the citizens of another country, and remaining subject to the jurisdiction of the parent country while in a state of dependence.

CHAPTER III.

GOVERNMENT OF THE UNITED STATES.

1. The chief magistrate of the United States is called *president*. He is elected for a term of four years, by electors chosen by the people.

2. Each state has as many electors as it has members in congress : for example, Ohio has twenty-one (21) congressmen and (2) two senators, and is, therefore, entitled to twenty-three electors ; the two electors corresponding to the two senators are called *electors at large*. The electors are chosen at the time of the presidential election and constitute the *electoral college*. On the first Wednesday of December after the election, the electors of each State meet in their respective capitols (or in some other designated place) and cast their votes for president of the United States, and for vice-president also ; these results are forwarded sealed to the president of the United States senate, who, upon

the second Wednesday of February, opens and reads these results in the presence of both houses of congress. A majority of the votes cast determines the election.

3. As has been observed congress is composed of two branches, the lower house or house of representatives, and the upper house or senate.

4. The senators are elected to serve a period of six years. Each state is entitled to two senators who are elected by the state legislatures of their respective states.

5. The president of the United States shall be at least thirty-five years of age : a senator thirty : a congressman twenty-five.

6. The members of the lower house of congress are elected to serve a term of two years, and are elected by a direct ballot of the people. There is one congressman for every 154,000 inhabitants, and according to this apportionment there are in all 325 congressmen.

7. For the purpose and convenience of election each state is divided into congressional districts : a district often comprising many counties.

TERRITORIES.

8. The territories of the United States do not elect senators, but send one delegate each, to the national legislature ; these delegates can speak on all questions pertaining to their own territory, but cannot vote.

(1) The governors of the territories are appointed by the president ; when a territory has sufficient population, it may be admitted into the union as a state by a vote of congress.

(2) No fixed number of inhabitants is required, which will admit a territory into the union, but the whole question of admission is at the discretion of congress.

9. The several states of the union have forms of government modeled after that of the general government ; they differ among each other only in matters of detail.

10. The president, after having entered upon the duties of his office, appoints, with the consent of the senate, seven persons who are to become his legal assistants and advisers ; these constitute his *cabinet*. Each cabinet officer has charge of a special department of the government.

LIST OF CABINET OFFICERS.

Secretary of State.....	F. T. Frelinghuysen.
Secretary of the Treasury.....	Charles J. Folger.
Secretary of War,	Robert T. Lincoln.
Secretary of Navy.....	William E. Chandler.
Secretary of the Interior.....	Henry M. Teller.
Postmaster General, ...	T. O. Howe.
Attorney General.....	Benjamin H. Brewster.

11. These departments of the government are called *bureaus of the president*. There are also sub-divisions; viz., *The bureau of education*, signifying that department of the government relating to education; etc.

12. The judiciary power of the United States is vested in a supreme court, nine circuit courts, and fifty-eight district courts.

CHAPTER IV.

GOVERNMENT OF OHIO.

1. Ohio, like the other states of the Union, has a government patterned after that of the general government; hence, is republican in form.

2. The officers of the state are governor, lieutenant governor, secretary of state, treasurer, auditor, attorney general, commissioner of common schools, members of Board of Public Works, judge of the Supreme Court, clerk of the Supreme Court.

3. Judges of the Supreme Court are elected for a term of five years; the Auditor for four years; Commissioner of Common Schools, Clerk of Supreme Court, and members of Board of Public Works are elected for three years; all the other State officers, for two years.

4. The legislature consists of a House of Representatives and a Senate: the members of both houses are elected for two years.

5. The county officers are treasurer, auditor, recorder, surveyor, sheriff, coroner, clerk of court, infirmary directors, commissioners, prosecuting attorney, probate judge.

6. The probate judge, clerk of the Court of Common Pleas, county commissioner, surveyor, and auditor are elected triennially; the other county officers biennially.

7. All county and state officers are elected at the time of the Fall election—the second Tuesday of October.

9. The state is divided by Congress into townships six miles square, and the townships into sections of 360 acres each. The townships are numbered north and south, and the ranges east and west.

NORTH.

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

SOUTH.

Governor, — — — \$4,000.	School Commissioner. \$2,000.
Lieutenant Governor, — 800.	Insurance " 2,000.
Secretary of State, — 3,000.	Railroad " 2,000.
Treasurer, — — — 3,000.	Sec. Brd. of Agriculture, 2,000.
Auditor, — — — 3,000.	State Librarian. — — 1,500.
Attorney General. — — 2,000.	Chief Justice, — — 3,500.
Adjutant. — — — 2,000.	Clerk of Supreme Court, 1,500.

RELIGIONS.

1. All nations have some *religious notions*, and few or none are without a belief in rewards and punishments, bestowed by an overruling Deity, or Providence. The importance attached to religion by mankind in all quarters of the globe, is strikingly

displayed in the number and costly edifices erected for this purpose.

2. The ideas of mankind are, however, much diversified as to the character of the Deity and the modes of doing him homage. The belief in Christianity prevails in Europe, and is embraced by about one-third of the human race.

3. *Religion* is the reverent worship which man pays to some deity, or divinity.

(1) Religion may be divided into two classes, *true* and *false*.

(2) *True religion* consists in worshiping God according to his revealed will; *false religion* consists in worshiping idols, such as objects in nature, or the works of man's own hands.

(3) Religion may again be classed into four divisions; Christian, Mohammedan, Pagan, and Jewish.

4. *Christianity* consists in believing in Jesus Christ as the savior of the world.

(1) *Christians* are divided into Roman Catholics, Greeks and Protestants.

(2) *Roman Catholics* are those who believe in the Pope as the spiritual head of the church.

(3) The *Greek Christians* reject the Pope of Rome, but accept the Patriarch of Constantinople as the head of their church.

All these agree in the necessity of redemption through the Savior.

5. *Protestants* are divided into various denominations; the Episcopalians, Methodists, Baptists, Presbyterians, Congregationalists, Universalists, Friends, Lutherans, are among the leading. These all agree on leading points of doctrine but disagree on minor points.

6. The *Jews* are the descendants of the ancient inhabitants of Judea. They believe in the Old Testament, and maintain the ancient worship of their fathers, but reject the New Testament, and expect a savior yet to come. Their places of worship are called *synagogues*.

7. The *Mohammedans*, or *Musselmans*, are believers in Mohammed, an Arabian, who lived in the sixth century after Christ, and who pretended to bring a revelation from heaven, called the Koran. His creed was, "There is one God and Mohammed is his prophet." This religion predominates in Turkey in Europe, and the western part of Asia. It is also scattered over other parts of Asia and portions of Africa. Mohammedan places of worship are called *mosques*,

8. The *Brahmins* and *Buddhists*, or *whorshippers of the Grand Lama*, believe in a deity who holds communion with man-

kind through many inferior divinities, some good, and some bad. Of these, they have images and idols, which they worship in temples called *pagodas*.

Brahmanism is a very old system of pagan worship. Brahm, the supreme divinity of this system, delegated his power to three inferior gods, Brahma the creator, Vishu the preserver, and Siva the destroyer. The Hindoos are followers of this faith.

About four hundred years before the Christian era, a great reformer arose under the name of Buddha, "the enlightened," who introduced many important changes into Brahmanism. He is worshipped as a god, and his followers are called Buddhists. This religion, in a modified form is the religion of the Japanese, Chinese, and most other Mongols. There are no distinctions of caste among the Buddhists so common among the Brahminists.

9. Many ignorant and savage tribes, called *pagans*, believe in *fetishes*, or good and bad spirits, which dwell in particular places. They also put faith in idols and amulets. To their gods they pay a kind of worship, which often consists in dance sacrifices and other uncouth rites designed to propitiate them. *Cannibals* are those who not only practice human sacrifice, but also eat human flesh.

10. Christians maintain that all other religions other than their own are false; and, if we compare the state of society in Christendom with that in other parts of the earth, we shall see that, while Christianity tends to enlighten and elevate the mind, all the heathen religions debase and degrade it.

CHAPTER VI.

LANGUAGES OF MANKIND.

1. *Language* is any means of communicating thought, feeling, or purpose. Language may be classed as follows:

Language,	{	1. Natural.			
		2. Artificial.	<table border="0"> <tr> <td>a.</td> <td>Spoken.</td> </tr> <tr> <td>b.</td> <td>Written.</td> </tr> </table>	a.	Spoken.
a.	Spoken.				
b.	Written.				

(1) *Natural language* is that which all beings have in common, and consists in laughing, weeping, expressions of the face, gestures, and the like.

(2) *Artificial language* is language invented by man.

(3) *Spoken language* is the expression of thought, feeling, etc., by means of articulate sounds.

(4) *Written language* is the communication of thought, etc., by means of written or printed characters.

2. There are many different *languages* in the world, and even different letters and alphabets. All the languages of Europe have the same letters as our own, except the Greek and Turkish. The following are specimens of some of the principal European languages, given in the first line of the Lord's prayer :—

English—Our Father, which art in heaven.

German—Unser Vater, in dem himmel.

Dutch—Onze Vader, die in de hemelen zijt.

Latin—Pater nostro, qui est in coelis.

Italian—Padre nostro, che sei ne' cieli.

Spanish—Padre nuestro, que estas en los cielos.

French—Natre Pere, qui es aux cieux.

3. In all these languages, the same letters are used : the numeral signs are also the same. As to numbers, they form a universal language for Europe and America. 1, 2, 3, 4, 5, etc., though called by different names, carry the same ideas throughout those countries.

4. There are about 80 original languages in the world and 3,500 dialects : some authors estimate the number of languages more than 800 and dialects about 5,600.

(1) A *dialect* is a peculiar mode or form of writing and speaking a language. More than 1,600 dialects exist among the American Indians.

5. The *English* language, spoken by us, as well as by the people of Great Britain, is the most extensively used of any European tongue. It is noted for its strength, simplicity, large vocabulary, and the great number of books and newspapers printed in it.

The *German* language is not so smooth as the English or French, but many valuable books have been written in it.

The *French*, for a long time the court language of Europe, is noted for its beauty, ease of learning it, power of expression, and for its many valuable books.

The *Italian* is the language of poetry and song.

The *Spanish* and *Portuguese* are also cultivated much.

The *Chinese* is spoken by the greatest number of people.

6. There are many books in the Chinese, Persian and Arabic languages : but they are far inferior to those of Europe.

The rudest tribes of men have language : but many tongues are never used in writing or in books.

7. The languages spoken by the Germanic nations are derived from the ancient German. Those languages derived from the ancient Latin are called Romanic.

The following classification will indicate at a glance the derivation of the principal languages of Europe :

LANGUAGES	1. GERMANIC	1. English.
		2. German.
		3. Dutch.
		4. Norwegian.
		5. Swedish.
		6. Swiss.
		7. Danish.
	2. ROMANIC	1. French.
		2. Spanish.
		3. Portuguese.
		4. Italian.
	3. CELTIC	1. Irish.
		2. Scotch.
		3. Welsh.
	4. SLAVONIC	1. Russian.
		2. Polish.
		3. Turkish.

CHAPTER VII.

OCCUPATIONS OF MANKIND.

1. Most of the animal tribes, as quadrupeds, birds, fishes, insects, &c., live on the spontaneous products of nature.

2. These have hair, or feathers, or scales, for clothing. They dwell in the open air, or in water, without shelter, or in rude, or unartificial houses and homes.

3. It is otherwise with mankind. They are born naked, and must have artificial clothing. They must have various kinds of food, mostly prepared by cookery : and finally they must have well constructed houses.

4. In a savage state the wants of man are few, and he lives almost like a beast : but as he grows more refined, his wants are multiplied, and, to supply them, he becomes a thinking, contriving, industrious being. Thus the desires of man are the sources of his improvement.

5. In a cultivated state of society, some men devote themselves to *agriculture*; that is, they till the land, and are called *farmers*, or *husbandmen*. To the labor of a farmer we are indebted for wheat, rye, and other grains, which are made into bread; and for meat, milk, and the flax, wool, and cotton of which our clothing is made.

6. Some persons devote themselves to the making of shoes, clothes, hats, and other articles; these are called *manufacturers*. Many men learn trades, such as that of a mason, carpenter, blacksmith, &c.; these are called *mechanics*.

7. Some persons buy and sell different kinds of useful articles. The common business of buying and selling is called *trade*; that which is carried on in ships, or vessels, is called *commerce*.

It is by the means of commerce that the products of one country are carried to other countries. By means of commerce, we get tea from China, pepper from Sumatra, coffee from Java, sugar from the West Indies, oranges and lemons from Portugal, figs from Smyrna, silks from France, etc. We give, in exchange for these articles, the products of our own industry.

8. The *exports* are the articles sent out of a country, as merchandise: The *imports* are the articles of merchandise brought into a country. *Domestic commerce* is the trade between places of the same country. *Foreign commerce* is the trade between different countries.

9. Many persons devote themselves to *mining*, for the purpose of obtaining coal, iron, tin, copper, gold and silver; others become *fishermen*; others *huntsmen*; others again fell trees, for timber.

10. One of the principal occupations of society, in all ages of the world, has been that of *war*.

The profession of the soldier has generally taken precedence of the industrial and productive occupations. Mankind has at last learned, however, that war is generally destructive to the best interests of the people at large, and hence, there is a growing love of peace among all intelligent nations. We may hope that the day is not far distant when nations shall lay aside their weapons of misery and death and learn to war no more.

11. The *productions* of a country form important topics of geography. These are called *agricultural*, *mineral*, and *manufactured*.

The agricultural productions may be divided into two classes, vegetable and animal. The most important vegetable productions are wheat, corn, rice, potatoes, cotton, trees for building, medicinal plants, &c. Domestic animals are those animals which have been tamed by man for his use, to assist him in the production of wealth.

The most useful domestic animals are the horse, mule, cow, sheep, goat.

dog, hog, &c. The leading manufactured products are cotton and woollen goods, silks, hardware, machinery, agricultural implements, boots and shoes, clothing, furniture, paper, books, musical instruments, articles of fashion, &c.

CHAPTER VIII.

VIEW OF THE WORLD.—GEOGRAPHICAL OUTLINE.

1. The surface of the globe is viewed by geographers under six Grand Divisions.

EXTENT AND POPULATION.

2. It is supposed to contain nearly 200,000,000 square miles. A little over 50,000,000 are land, and 150,000,000 water. The whole number of inhabitants upon the globe is estimated at 1,462,500,000, distributed as follows:

GRAND DIVISIONS.	EXTENT IN SQUARE MILES.	POPULATION.
North America.....	9,050,000	74,000,000
South America.....	6,900,000	25,500,000
Europe.....	3,800,000	318,000,000
Asia.....	17,100,000	835,000,000
Africa.....	11,557,000	206,000,000
Australia.....	3,425,000	4,000,000
	51,831,000	1,462,500,000

RELIGIONS OF THE WORLD.

3. 215,000,000 Catholics; 130,000,000 Protestants; 78,000,000 Greek Christians; 300,000,000 Buddhists; 145,000,000 Brahmins; 100,000,000 of the Religion of Confucius; 12,000,000 to 20,000,000 Shinto Religion of Japan; 109,000,000 Mohammedans; 7,000,000 Jews.

MAPS.

4. These are usually so drawn, that the *western hemisphere* contains the American continents, and the *eastern hemisphere* the eastern continent, embracing Europe, Africa and Asia. Each hemisphere ranges through 180 degrees of longitude; the dividing lines are the meridians 20 degrees west of Greenwich and 160 east of the same.

DISTRIBUTION OF LAND.

5. In looking at the maps of the hemispheres, it is obvious that by far the larger portion of land on the globe lies north of the equator, or in the northern hemisphere.

6. All North America, the West Indies, a portion of South America, all Europe, Asia, and nearly all Africa, lie in the northern hemisphere.

7. The greater part of South America, a small portion of Africa, and all Australia lie in the *southern hemisphere*.

8. In general it may be stated that not more than 50,000,000 people—that is not more than one-thirtieth of the population of the globe—live south of the equator.

CHAPTER IX.

HISTORICAL OUTLINE.—ANTIQUITY OF THE EARTH.

1. By examining the surface of the earth, geologists have come to the conclusion that the globe on which we live has existed for many thousands of years. It appears to have undergone many revolutions, during which there have been several *successive creations*, by which the whole animal and mineral kingdoms have been changed.

MOSAIC CREATION.

2. But that *creation* of which the Bible tells us, when the present continents and oceans were formed, and when the present races of animals, with man himself, were made by God, took place nearly 6000 years ago.

EARTH PREPARED FOR MAN.

3. Previous to this time, no human beings had existed on the earth. Various kinds of animals had lived and perished; vegetation had overspread the face of nature; but, as yet, there had been no tenant of the globe endowed with intelligence sufficient to understand and appreciate the ways of Providence, but at last the earth was fitted and prepared to be the abode of man.

ADAM AND EVE.

4. And now God created Adam and Eve. At this point of time, the history of the human race begins. We are entirely in-

debted to the first books of the Old Testament for an account of the creation, and the history of the world for 2000 years after that event. The history of subsequent ages is made up from inscriptions upon monuments, the remains of sculpture, and from manuscripts, and documents of various kinds.

CAIN AND ABEL.

5. The Bible informs us that Adam and Eve had several children; the first of whom was Cain, and the next Abel. These quarreled, and Cain killed his brother: a terrible event, foreshadowing that strife which, in all ages, has filled the history of mankind with records of battle and bloodshed.

THE DELUGE.

6. The place where Adam and his immediate descendants lived, was in the western part of Asia, where the climate was warm, and the soil fruitful; and many of them lived to the age of eight or nine hundred years, they increased rapidly and built large and populous cities. But they became very wicked, and the race was cut off by a deluge, or flood, 2,348 years before Christ, or 1,565 years after the creation.

NOAH—BABEL.

7. Noah and his family, with pairs of various animals, were saved in an ark, which he built by the command of God. These persons settled in the valley of the Euphrates, and their descendants began to build a tower, called *Babel*, which should reach to the skies. But they were punished for their vanity; for in the midst of their work, their language was confounded, so that the workmen could not understand each other. This event, called *confusion of tongues*, took place 2,247 years before Christ.

CHAPTER X.

DISPERSION OF MANKIND.—EMIGRATION.

1. At this very early period, various bands of emigrants left the valley of the Euphrates, and settled in different parts of Asia. Some also proceeded to Africa, and founded the kingdom of Egypt, 2188 B. C.

2. After several centuries, other companies established themselves in Europe; still later, various tribes found their way to the islands of the Pacific ocean, and, at last, to America. Thus the six grand divisions of the earth were peopled by the descendants of Adam and Eve.

VARIETIES OF MANKIND

3. At the present time, we find mankind not only differing in government, religion, manners, customs, but also in personal appearance, intelligence, character, and language. These varieties are supposed to be the result of differences in climate, food, government, and modes of life.

ASSYRIA.

4. Although large numbers of people emigrated from the valley of the Euphrates, it appears that multitudes remained and here the first great empire began 2229 B. C. This was called Assyria, and its capital bore the name *Nineveh*. The latter became a mighty city, with, at least, half a million inhabitants; but it is now a heap of ruins—its houses, temples, and palaces being buried beneath the soil.

BABYLON.

5. Babylon was another great city, founded in these ancient times, and at no great distance from Nineveh. It became the most splendid city in the world, and is often mentioned in the Bible. This, too, has perished. Where kings and queens, and princes once dwelt, the wolf and jackal, the owl and the bat, find a secure retreat.

ORIGIN AND PROGRESS OF CIVILIZATION.

6. It appears that civilization had its beginning in western Asia. Here mankind first formed society, organized government, and made progress in the arts and sciences. At no distant day, Egypt became the most enlightened, cultivated, and civilized country in the world. At a later period, the arts and sciences passed into Europe, where they were carried to greater perfection than they had been before. America was discovered at a later date, and hither European civilization was gradually transplanted.

CHAPTER XI.

HISTORY OF GEOGRAPHY.

The knowledge of geography possessed by the ancients was exceedingly limited, and their ideas and notions concerning this world we live in were very erroneous.

The *Phœnicians* were the first who made any great progress in extending the bounds of geographical knowledge. They explored all the coasts of the Mediterranean, passed through the strait of Gibraltar, and visited the shores of Europe to Britania, and the Baltic. They also continued their explorations along the shores of Africa to the tropic of Capricorn. What knowledge of distant lands the Hebrews possessed, they doubtless obtained of the Phœnicians.

Necho, King of Egypt about 600 B. C., was the first who made any attempt to enlarge the bounds of geographical knowledge, by an exploring expedition. He sent a fleet of Phœnicians down the Red sea and into the Indian ocean: after circumnavigating Africa they came back through the pillars of Hercules, or strait of Gibraltar.

The *Carthaginians* did much to increase a knowledge of geography among the ancients. Their extended commerce led necessarily to long voyages, and in this way became acquainted with many lands and many peoples.

About 320 B. C., *Pytheas*, of Masilla, the modern Marseilles, visited some distant land, supposed by some to have been Iceland, by others Jutland. About 330 B. C., *Alexander the Great*, by his explorations in the conquest of the world, greatly enlarged the knowledge of Asia: he traveled as far as India and China.

Erastosthenes was the first who made a systematic attempt at scientific geography. He flourished at Alexandria in the latter part of the third century B. C. The scientific schools of Alexandria recognized the globular form of the earth, and Erastosthenes based his system upon this recognition, though he did not regard any such thing as equator, poles and tropics,—primal features of modern geography. The central base line was a parallel drawn through all places having $14\frac{1}{2}$ hours as their longest day. Iceland was considered the north end of the world. While it was generally believed that beyond these discoveries there was nothing but an impassable ocean, Erastosthenes conjectured that continents and islands might be reached by sailing westward.

Hipparchus, who lived at Rhodes, in the second century before Christ, succeeded Erastosthenes and based the whole science of geography on astronomical principles which was only a development of the system as explained by his predecessor.

Strabo, a Greek of Pontus and a great traveler, who lived about the time of the dawn of the Christian era, wrote the first treatise on geography. The knowledge of the earth at this time was still quite vague. The countries bordering on the Mediterranean were tolerably well known, but the knowledge of the rest of the world

was very imperfect. They knew nothing of China, Siberia, Tartary, Japan, and looked upon the Caspian sea as the northern limit of the world.

The earliest Roman geographer, Pomperius Mela, who lived in the time of Claudius, divided the earth into two hemispheres: the northern, that part of the earth which is known, and the southern, which is unknown. The former he divided into three great divisions, Europe, Asia and Africa: however, the boundaries of these divisions were not exactly as defined by modern geographers.

Ptolemy, a still more famous geographer, a resident of Alexandria, lived in the second century after Christ.

The notion that the known world was surrounded by boundless seas had been given up, and that the boundary of the world was an expanse of *terra incognita* was substituted. Africa was supposed to extend indefinitely to the south, and the Indian ocean was represented as being surrounded by land, like the Mediterranean.

From this time on during the dark ages but little progress was made in geographical knowledge. In the 9th century the Northmen are said to have discovered Greenland, and in the 10th century, America. *Marco Polo*, a Venetian, gave the first knowledge to Europe of the Japan islands. He also visited China and the East India Islands. He lived in the 13th century, A. D. In the 15th century the spirit of enterprise and exploration was aroused and Portugal took the lead.

But the greatest of all geographical explorers, whose name will live in the memory of man as long as time shall last, and whose praises will be sung to all coming generations, was *Christopher Columbus*. He was a native of Genoa; a knowledge of the spherical figure of the earth led Columbus to believe the eastern parts of the earth approached so near Europe that they could be reached by sailing westward. The great object which at this time engaged the maritime world, was to find a passage by sea to India. On August 3rd, 1492, under the patronage of Ferdinand and Isabella, king and queen of Spain, he left Palos with three small vessels and ninety men. On the 12th of October following, after a perilous voyage, he discovered Guanahani, one of the Bahamas, and which he named San Salvador. He made three other successful voyages, but was finally ignominiously thrown into prison, where he died ignorant of the fact that he had discovered a continent.

From this time forth, many discoveries and explorations were made, and a knowledge of the earth rapidly increased. The Persians have aided much in a better knowledge of Asia. The chief

African explorers have been James Bruce, Mungo Park, Major Denham, Lieutenant Clapperton, Richard Lander, Captains Burton and Speke, Dr. Livingston, Dr. Barth, Heuglin, Sir Samuel Baker, Stanley, and Paul Du Chaillu.

Humboldt, Lewis and Clark, by their travels, have enlarged our acquaintance with the interior of America.

China and Japan have lately been opened to the world, and our knowledge of these countries has greatly increased. Much of the interior of Australia remains to be explored; of the island of New Guinea we are almost wholly ignorant, except what has been observed along the coast.

Carl Ritter created the science of comparative geography, although marked changes have taken place since his time in the literature of geography. Under the auspicious labors of such excellent institutions as the London Geographical Society, we may reasonably hope that, in the near future, our knowledge of this world will be much more extended and much more perfect.

CHAPTER XII.

ON TEACHING GEOGRAPHY.

Geography is naturally interesting to most people: yet in the hands of an unskillful teacher, it becomes dry and irksome. I presume that nearly every teacher who has his heart in the work, sometimes feels himself perplexed in endeavoring to interest his pupils; and to give a little assistance and a word of advice to such, is the object of this article.

Of course, it is necessary that good text-books be provided; for with a poor tool no artisan can expect to do good work. But the matter of success depends much more upon the teacher than upon the text-book he uses.

In the first place the teacher must be enthusiastic, in real earnest, if he expects his pupils to be interested. The pupils will naturally imbibe the spirit of the teacher and will move or lag in the recitation as he does. No one can expect to interest a class in a subject in which he himself feels no interest.

In the second place the teacher must be thoroughly prepared on the lesson. He ought to be so full of the subject as to be able to conduct the recitation without the text-book. He must know more than the text-book contains, nay, even more than he expects to teach, if he wishes to teach geography or any other subject successfully.

Geography should be taught topically, that is, the whole subject should be thoroughly classified, so that every department is presented systematically in all its various relations. As black-board exercises, the pupils should frequently be required to write out a topic list for the study and recitation of the lesson. These exercises are invaluable drills, and the whole lesson should occasionally be written out in full, following the order in the topic list, each pupil taking one or more divisions. Spelling, punctuation, grammatical errors, choice of words, etc., should be pointed out and corrected by the pupils of the class, with the help of the teacher, in friendly criticism.

Pronunciation can not be too carefully watched, and no error of this kind should be allowed to be passed by without correction. A good pronouncing gazetteer is an invaluable article on every teacher's desk.

Great care should be taken that there shall not be too much uniformity in the mode of recitation. Pupils will tire of routine work, and that teacher who can successfully vary the mode of recitation has gained a very important vantage ground. Variety of the right kind is a very significant factor in conducting a successful and interesting recitation of any kind.

The teacher must possess originality, the ability to devise and invent methods, or he must be set down as a failure to a great extent. Many teachers go to teacher's institutes, read books and methods of instruction, and expect that a careful application of these methods will make them successful, but they often find themselves sadly mistaken. It is well enough to learn methods, but in practicing these methods, the teacher must be himself, he must be original in them, not merely a copyist.

It should also be remembered that what one teacher can use with success another may fail in, and what will do for one school or class will not do for all. It is not necessary that the teacher should be a chameleon, but he ought to be able to change his tone, language, and methods to suit the circumstances.

Map drawing is important, but too much time is spent in attempting to draw artistic maps.

If properly conducted, sketching can be made very interesting and certainly far more profitable than the ordinary system of map-drawing.

All the pupils should be sent to the board at the same time, and then at the direction of the teacher, every one should draw the same lines, and locate the same places, at the same instant; and this should be done from memory without any stereotyped rules of diagram. These maps should all be reviewed and criticised by the class and teacher. From ten to fifteen minutes can be spent

very profitably in this way, after which the description of the country under consideration can be entered into with a zest, because all have become interested.

CHAPTER XIII.

ON THE STUDY OF GEOGRAPHY.

FIRST.—METHOD.

1. The *synthetic method* consists in beginning with the pupil's own immediate neighborhood or home; it then takes the township, next the adjoining township until the whole county is embraced; from the county to adjoining counties, until all the states are included. After this follows the outline of the grand divisions, and so on till the whole world is complete.

2. The *analytic method* is the opposite and begins with a general view of the world, by regarding its form and leading divisions; then subdivisions. Both these methods have strong points, but the latter is generally preferred, inasmuch as it early admits of the introduction and study of the globe.

SECOND.—FACULTIES OF THE MIND EXERCISED.

1. The *perceptive* faculties are first addressed,—that is, the impression which any object makes upon the mind while viewing it.

2. The *conceptive* follows which retains past perceptions, and forms from them general notions, classifications, and furnish material for thought. After the pupil has seen a mountain range or waterfall he recalls afterward to his mind the shape and height of the mountains, the roar of the cataract, the volume of water, the force of the current, etc. A proper cultivation of this faculty furnishes an indispensable basis of progress in geographical knowledge.

3. *Imagination*. This faculty is constantly brought into requisition. When a volcano is spoken of the mind at once goes out to imagine the flowing lava, the lurid flames as they dart from its summit, the forked lightning, and the whole enveloped by dense clouds of smoke, the hoarse howlings of the raging elements within, the quakings of the earth, the mighty force exhibited, etc.

The course of the streams must be followed in the imagination, the general configuration of the coast and surface must be pictured in the mind, else the knowledge of countries and places never seen, will remain a blank.

4. *Memory*. This is the last faculty called into exercise, but is one of the most important. The study of geography forms an admirable means of strengthening this faculty and should always have its due share of cultivation.

DESCRIPTIVE GEOGRAPHY.

CHAPTER I.

SUGGESTIONS TO TEACHERS.

The following *topic list* is to be used in the preparation and recitation of lessons. After the *map exercises* have been carefully learned and recited the description of the country under consideration should be taken up. Assign to each pupil one or more topics, to be written out on the black-board, and then recited and criticised : or if preferred these topics can be recited orally.

Only the names of places to be located need be written : the locating should be done according to model given below.

TOPIC LIST.

I. Position	{ 1. By Boundaries. 2. By Lat'd & Long'd.	X. Commerce	{ 1. General features. 2. Exports. 3. Imports.
II. Extent	{ 1. Length. 3. Breadth. 3. Area.	XI Nat. Adv'g	{ 1. For Agriculture. 2. For Commerce. 3. For Manufact'ng.
III. Coast	{ 1. General Outline. 2. Capes. 3. Gulfs and Bays. 4. Seas. 5. Chan'ls, Str'ts, Sn'ds. 6. Islands. 7. Peninsulas.	XII. Int'nl Imp'ts	{ 1. Public Roads. 2. Railroads. 3. Canals, etc.
IV. Surface	{ 1. Gen'l Characteristics. 2. Mountain Ranges. 3. Mountain Peaks. 4. Pl'ns, Plat'us, Val'ys. 5. Natural Curiosities.	XIII. Animals.	
V. Lakes	{ 1. Location. 2. Description and uses.	XIV. Political Divisions.	
VI. Rivers	{ 1. Course. 2. Size 3. Uses.	XV. Inhab'nts.	{ 1. Race. 2. Number. 3. Occupation. 4. Language. 5. Government. 6. Education. 7. Religion. 8. History.
VII. Soil.		XVI. Chief towns and cities.	{ 1. Location. 2. Population. 3. Leading Ind'str's
VIII. Climate.		XVII. Foreign Possessions.	
IX. Productions	{ 1. Agricultural. 2. Mineral. 3. Manufactured.		

HOW TO MAKE MAP EXERCISES INTERESTING.

"In Geography, much has to be learned as words, or little more : the verbal memory has a large share in the acquisition. In this view, the names should be relieved of dryness by various arts, as well as by endeavoring to impress real conceptions corresponding to them." — *Alexander Bain*.

The map exercises can be made very interesting, as follows : Divide the class in two equal sections, say A & B : give one question or more to each pupil, and when the A's recite allow the B's to correct the errors : do this by selecting some one of the B's, but if he fails allow some one of the A's to correct and so save the word to his side. No one should have more than one trial, and neither side more than two on the same word. Some one may be allowed to keep a tally of questions missed. The teacher must be umpire.

MODELS FOR MAP EXERCISES.

Bays, etc.—The Hudson bay is in the north-eastern part of North America and is a tributary to the Atlantic Ocean. James bay is in the southern part of Hudson bay.

Capes.—Cape Barrow projects from the northern shore of Alaska, into the Arctic Ocean.

Straits.—Behring's strait separates North America from Asia, and connects Behring's sea with the Arctic Ocean.

Islands.—Newfoundland lies east of North America, between the gulf of St. Lawrence and the Atlantic.

Peninsulas.—Florida projects south-west from the south eastern part of the United States between the Atlantic and the gulf of Mexico.

Mountain Ranges.—The Apalachian mountains are in the eastern part of the United States and trend north-east and south-west.

Mountain Peaks.—Mount St. Elias is in South-eastern Alaska.

Plains.—The Colorado plateau lies between the Rocky and Wasatch mountains.

Lakes.—Lake George is in the eastern part of New York.

Rivers.—The Mississippi river rises in Lake Itasca, in Minnesota, flows in a southerly course, and empties into the gulf of Mexico.

Cities.—New York is situated in south-eastern New York on the bay of New York.

Columbus, the capital of Ohio, is situated near the center of the state, on the Scioto river.

CHAPTER II.

NORTH AMERICA.—MAP EXERCISES.

GULFS, BAYS AND SEAS.

Caribbean, Mexico, Hudson, Baffins, California, Chesapeake, Honduras, James, Coronation, Boothia, Penny, Fundy, Ungava, Lincoln, Fonseca, Nicoya.

CAPES.

Barrow, Bathurst, Prince of Wales, Lisburn, Corrientes, San Lucas, San Eugenia, Blanco, Flattery, Mendocino, Mariato, Chidley, Charles, Sable, Hatteras, Cod, Race, Farewell, Brewster, Bismark, North.

CHANNELS, STRAITS AND SOUNDS.

Florida, Hudson, Davis, Smith, Denmark, Behring, Fox, Barrow, Melville, Banks, Jones, Lancaster, Belleisle, Chesterfield Inlet.

ISLANDS.

Newfoundland, Cuba, Hayti, Jamaica, Porto Rico, West Indies, Bahama, Greenland, Iceland, Cape Breton, Bermuda, Disco, Santa Barbara, Vancouver, Queen Charlotte, Bank's Land, North Devon, Baffin Land.

PENINSULAS.

Lower California, Yucatan, Alaska, Labrador, Florida, Kenai.

MOUNTAIN RANGES.

Rocky, Apalachian, Sierra Madre, Wasatch, Sierra Nevada, Cascade, Coast, Alaskan.

MOUNTAIN PEAKS.

St. Elias, Fairweather, Fremont's Pk., Popocatepetl, Toluca, Colima, Jorulo, Orizaba, Shasta, Brown, Hooker, Hekla.

PLAINS, PLATEAUS.

Colorado, Great Basin, The Great Plains, Atlantic Coast Plain, Mississippi Valley, Arctic Plains, Arctic Plateau.

LAKES.

Great Lakes, Superior, Michigan, Huron, Erie, Ontario, Winnipegosis, Manitoba, Great Salt, Deer, Athabasca, Great Slave, Great Bear, Clearwater.

RIVERS.

Mississippi, Missouri, Platte, Arkansas, Red, Ohio, Rio Grande, Pecos, Grande de Santiago, Colorado, Gila, Columbia, Yukon, Mackenzie, Athabasca, Saskatchewan, Red river of the North, Albany, Rupert, East Main, Nelson, Churchill, Coppermine, Great Fish, St. Lawrence, Ottawa.

CITIES.

Washington, New York, Philadelphia, Vera Cruz, Boston, Cincinnati, Louisville, Chicago, Acapulco, Cleveland, Buffalo, Quebec, Montreal, Mobile, Ottawa, Toronto, Halifax, St. John's, Wilmington, Denver, St. Louis, New Orleans, San Francisco, Mexico, Havana, Mazatlan, Matamoros, Guatamala, San Salvador, St. Paul, Milwaukee.

RELATIVE POSITION.

In what direction is Quebec from Mexico? from Havana? Montreal? Mexico from Greenland? from Central America? Alaska? West Indies? St. Louis from Nashville? from New Orleans? Mexico? New York? Baltimore? San Francisco? Austin?

TRAVELS.

Through what countries would you pass in traveling by land from Prince of Wales to the Isthmus of Panama? From Labrador to Mexico City? to Florida?

Trace a water route from New York to Halifax; to New Orleans; San Francisco; St. Paul; Vera Cruz; Chicago. From New Orleans to Pittsburgh; to Columbus; Kansas City; Havana.

MISCELLANEOUS.

What is the latitude of the mouth of the Mississippi? of Mexico? Washington? St. Louis? Quebec? What is the longitude of the same places? What place of North America has now the longest day? The shortest day? Are the days and nights any where of equal length? What is the difference of time between Washington and Chicago? Columbus? New York? Portland? In what direction from the north pole is Iceland? In what part of North America does the sun remain above the horizon all day on the 21st of June? By means of the scale of miles, what is the distance from Washington to New York? to Columbus? Chicago? New Orleans? James Bay? Cape Bathurst? Cape Farewell? Two men start from Buffalo, the one travels 5 degrees east and the other 5 degrees south; which has traveled farther and about how much? What is the altitude of the sun at noon in Boston on the 22d of September? on the 21st of December.

DESCRIPTION.*

POSITION.

1. North America lies between the parallels 7° and 72° north and between 55° and 168° west longitude.

It is bounded on the north by the Arctic Ocean; on the east by the Atlantic; on the south by the Atlantic, South America and the Pacific; and on the west by the Pacific.

EXTENT.

2. Its length is nearly 5,000 miles, and greatest breadth about 3,200 miles. Area 9,050,000 square miles.

COAST.

3. The coasts of North America are very irregular, and indented by vast gulfs and bays. The coast line measures 27,500 miles, and contains many of the finest and most capacious harbors in the world. It has one mile of coast to every 266 square miles.

CAPES.

4. The extreme capes are Barrow, Charles, Mariato and Prince of Wales; others are Sable, Farewell, Cod, Hatteras, &c.

GULFS AND BAYS.

5. The eastern coast is much more indented than the western. The most important inlets are Baffin's Bay, Hudson, the Gulf of St. Lawrence, which gives an entrance into the Great Lakes, Gulf of Mexico, California, and so on.

SEAS.

6. There are but few seas on the coast. The Carribbean lies south-east of the Gulf of Mexico; Lincoln sea north-west of Greenland.

CHANNELS AND STRAITS.

7. The Hudson strait, named after its discoverer, Henry Hudson, connects the Hudson bay with the Atlantic ocean, and separates Labrador from the islands north. The strait of Belleisle connects the gulf of St. Lawrence with the Atlantic and separates Newfoundland from Labrador. The strait of Florida connects, etc.

NAMES.	WIDTH OF STRAITS.	LENGTH.	REMARKS.
Hudson	60 to 150 miles.	400 miles.	
Belle Isle	12 "	.....	Navigation unsafe.
Florida	50 "	40 miles.	
Behring's	36 "	.....	Dis'vrd by Vitus Behring
Denmark	140 "	.....	1728
Davis	200 "	.....
Smith's Sound	80 "	110 miles	

ISLANDS.

8. Many of the Islands are very large and productive, but a vast majority of them are situated in the Arctic regions and are but little known. Some of the principal islands are Greenland and Iceland north-east of the continent: St. Lawrence east of the gulf of St. Lawrence, etc. Greenland is more than 1400 miles long and is probably the largest island in the world: some geographers think it is a cluster of islands frozen together. Iceland geographically belongs to America, but is considered by some as belonging to Europe, because of its early discovery, in the 9th century A. D. The areas of the principal islands are as follows:

Greenland.	760,000 square miles.	Vancouver.	13,000 square miles.
Newfoundland.	46,000 " "	Iceland.	40,000 " "
Cuba.	45,000 " "	Jamaica.	5,400 " "
Haiti.	29,000 " "		

PENINSULAS.

9. The peninsulas of most importance are Florida, in the south-eastern part of the United States, Yucatan, Lower California, Nova Scotia, etc.

SURFACE.

10. *The physical features* of North America are on the most gigantic scale. Here we find the longest rivers, the highest mountains, (except the Himalaya), the most extensive plains, the most sublime cataracts, the largest lakes, and the finest valley in the world.

MOUNTAINS.

11. The Rocky Mountains trend nearly north and south, from 200 to 700 miles from the coast: south of Colorado they are called Sierra Madre. *Sierra* means range and *madre* mother. The loftiest peak is Mt. Brown. The ranges west are called Cascade, Sierra Nevada, Coast Range. The Apalachian system in the eastern part of the United States trends north-east and south-west and comprises many ranges, the principal of which are Allegheny, Cumberland, Blue, etc.

The highest peak of the Apalachian is Mt. Mitchell, having an altitude of 6,000 feet.

12. The following are the highest peaks of various ranges :

St. Elias	19,500 feet.	Hooker,	15,750 feet.	Pike's Peak,	14,147 feet.
Fairweather,	19,500 "	Washington,	6,228 "	Popocatepetl,	17,783 "
Shasta,	14,440 "	Long's Peak,	15,271 "	Whitney,	15,000 "
Brown,	16,000 "				

Mean height of	Rocky Mountains,	10,000 to 12,000 feet.
"	Sierra Nevada,	8,000 to 10,000 "
"	Apalachian,	3,000 to 4,000 "

PLAINS, PLATEAUS, ETC.

13. The Mississippi valley, one of the most extensive in the world, lies between the Apalachian and Rocky Mountains. It is noted for its fertile soil and excellent drainage. The Colorado plateau, between the Rocky and Wasatch, is on an average 4000 feet above the sea level. The Great Interior Basin is elevated from 3000 to 5000 feet and is sterile. The height of land separates the rivers flowing into the St. Lawrence system from those flowing into the Hudson Bay system. There are many valleys of great beauty and fertility. The plateau of Anahuac is the most elevated portion of Mexico, having an altitude of 6000 to 8000 feet. The Arctic plateau has a height of 1500 feet.

NATURAL CURIOSITIES.

14. North America abounds in objects of great interest. A more detailed account of its curiosities will be given in the treatment of its divisions.

The Niagara and Yosemite falls are the grandest in the world. The Mammoth cave has been explored many miles. Other caves as the Madison, Blowing, Richmond are of great interest. The mountain and lake scenery is not surpassed by that of any other grand division. The Great Canon of the Colorado is the most sublime spectacle of its kind, being from 2000 to 6000 feet deep in many places: while the vast plains, enriched with nature's most profuse and luxuriant vegetation, stretch out in long distances.

LAKES.

15. North America is renowned for its great lakes. It contains three-fourths of all the fresh water on the globe. The largest, Lake Superior, is about one-third as large as Great Britain. Between lakes Erie and Ontario is the sublime cataract of Niagara. There are two *great lake regions* in North America; the first commencing in the eastern part including the lakes of Maine

and Canada, together with the Great Lakes, and thence reaching to the Arctic ocean; the second is found in the western part, embracing the lakes of Oregon, Nevada, California, etc. The latter are nearly all salt. The lakes of this Grand Division are also noted for their great depth and the commercial facilities they afford. In the north they are very transparent: in some, as in Lake Winnipeg, a white object can be seen at a depth of 90 feet.

	AREA. Square miles.	HEIGHT ab'v'e sea level.	DEPTH.		AREA. Square miles	HEIGHT ab'v'e sea level.	DEPTH
Superior.	32,000	603 ft	1,000 ft.	Winnipeg.	9,000	628 ft	.....
Huron.	27,000	582 "	800 "	Nicaragua.	6,165	128 "	320 ft.
Michigan.	22,400	582 "	1,000 "	Great Bear	14,000	.....	.....
Erie....	9,600	573 "	204 "	Great Slave	11,800	.....	.....
Ontario	6,300	250 "	606 "	Salt Lake	2,600	4,210 ft.	60 ft

RIVERS.

16. The Mississippi, measuring from the source of the Missouri, which may be considered its head stream, is the longest river in the world. Many other rivers are of great size and vast commercial importance.

The three great *water sheds* of North America divide it into four great *hydrographical basins*: 1st, That which empties its waters into the Arctic; 2nd, the Atlantic basin; 3rd, the Pacific basin; and 4th, the Gulf basin.

	LENGTH in miles.	AREA of basin.		LENGTH in miles	AREA of basin.
Mississippi.....	4,200	1,197,500	Arkansas.....	1,500	189,000
Missouri.....	2,908	518,000	Columbia.....	1,000	338,000
Mackenzie.....	2,120	442,000	Rio Grande.....	1,800	240,000
St. Lawrence....	2,120	298,000	Ohio.....	950	214,000

SOIL.

17. North America embraces every variety of soil. Its vast fertile regions are known and celebrated everywhere. Except in the far north and in the great interior basin, its soil is unequalled in productiveness, and great multitudes from all parts of the world have been attracted hither to reap the rich rewards it yields to husbandmen.

CLIMATE.

18. The climate of North America is variable and generally healthy, but is subject to great changes. It may be remarked

that it is about ten degrees colder on the Atlantic coast than on the opposite coast of Europe; the Pacific coast is also warmer than the Atlantic, owing to the Pacific equatorial current sweeping along the western shore. The prevailing westerly winds bring genial warmth and so render the climate of the Pacific states warmer. The extreme cold of the north-east is referable to the Arctic currents which skirt these shores.

PRODUCTIONS.

19. The leading *agricultural productions* are wheat, corn, rye, oats, barley, rice, cotton, tobacco, cattle, horses, sheep, swine, and the various fruits of torrid and temperate zones.

MINERALS.

20. Minerals of nearly all kinds are abundant. Gold is found in many parts, but especially in the western part of the United States. Silver in Colorado, Nevada, California, Mexico, etc. Iron and coal abound in almost all parts. The great lead regions of Illinois, Iowa and Missouri are the richest in the world. Other minerals are abundant;—zinc, copper, antimony, cobalt, nickel, platinum, titanium, quicksilver, tin, etc. Large quantities of petroleum are found in Pennsylvania. Marble, granite, limestone, etc., exist in many localities.

MANUFACTURES.

21. The manufactured productions are numerous and of many varieties, such as cotton and woollen goods, machinery, hardware, clothing, furniture, agricultural implements, books, leather, butter, cheese, etc.

The United States takes the lead of the North American States in Manufacturing.

COMMERCE.

22. America is still in its infancy, yet its commerce has grown to vast proportions. The United States ranks next to Great Britain in the commerce of the world.

(1) America *exports* raw cotton, wheat, petroleum, lumber, cattle, fruits, coffee, and a great variety of manufactures.

(2) The *imports* are manufactured articles from Europe, wines, raisins, spices, tea, and the like.

NATURAL ADVANTAGES.

23. The excellent soil, favorable climate, and good facilities for markets are the chief inducements and *advantages for agriculture*; while its extensive and numerous bays, length of sea-coast,

navigable rivers, broad and deep lakes, afford *advantages for commerce* not excelled by any other grand division. North America has one-third more sea-coast than Asia, about three times that of Africa, and considerable more than twice that of Europe. There are 13,000 miles of coast on the eastern side and 11,000 miles on the Pacific shore, including the indentations.

(1) The great abundance of minerals and all kinds of raw material, good shipping advantages, water power, cheap living are rapidly filling the country with manufacturing establishments.

INTERNAL IMPROVEMENTS.

24. The white inhabitants of North America particularly those of the United States, have always been active in the invention, introduction, and spread of useful improvements of all kinds. In the construction of railroads and canals it takes the lead. Although the country is new, it ranks among the foremost nations of the earth in the variety and value of useful inventions.

ANIMALS.

25. The domestic animals, such as the horse, cow, mule, sheep, hog, &c., were brought hither from Europe by the first settlers.

Among the principal native animals are the muskox, white bear, and silver fox of the polar regions. In the temperate parts are the bison, and several species of deer, bear &c. In the southern portion are alligators and a variety of poisonous serpents.

There are 700 species of birds, of which nearly 300 are peculiar; the turkey and mocking bird belong to the latter class.

POLITICAL DIVISIONS.

26. Danish America occupies the north-eastern part. The Dominion of Canada, the northern; United States, the central; Mexico, south-western; Central America, the southern; the West Indies lie between North and South America.

CHIEF TOWNS AND CITIES.

27. The leading cities are New York, on New York bay; Philadelphia, on Delaware river; Boston, on Boston harbor; Washington, on Potomac river; New Orleans, on southern part of the Mississippi river; Baltimore, on the Chesapeak bay; Chicago, on lake Michigan; San Francisco, on San Francisco bay; Mexico, the capitol of Mexico, in the southern part; Montreal

and Quebec, on the St. Lawrence river : Ottawa, on the Ottawa river, &c.

CITIES.	POPULATION.	CITIES.	POPULATION.
New York.....	1,206,000	Toronto.....	46,000
Philadelphia.....	847,000	Montreal.....	117,000
Brooklyn.....	567,000	Mexico.....	210,000
Boston.....	370,000	Havana.....	230,000
San Francisco.....	234,000	Halifax.....	30,000
Chicago.....	503,000	Vera Cruz.....	10,000

INHABITANTS.

28. The inhabitants of North America consist of the descendants of different European nations, negroes, Indians, and mixed races. The extreme northern part and Labrador, are inhabited by Esquimaux who belong to the Mongolian race. The white races are everywhere the governing people, except among the wild Indians, and in the island of Hayti where the people are chiefly of African descent, and have an independent government. These races are thus distributed :

Indians, 6,000,000 ; Mixed races, 3,000,000 ; Negroes, 10,000,000 ; Whites, 54,000,000 ; Total population, nearly 75,000,000.

29. The *leading occupation* is agriculture, which gives employment to more than six-sevenths of the whole population. Commerce, manufacturing, and mining, are extensively carried on.

	GOVERNMENT.	RELIGION.	LANGUAGE.
Danish America....	Belongs to Denm ^k	Lutheran.....	Dan'sh & Fr'nch
British America....	" to Great Brit'n	Protest. and Cath.	English.
United States.....	Republic.....	Protestant chiefly..	English.
Mexico.....	Republic.....	Principally Cath'lic	Spanish.
Central Amer. States	Republic.....	Principally Cath'lic	Spanish.

Hayti is occupied by two republics : Jamaica belongs to Great Britain ; Cuba and Porto Rico to Spain. The language of these islands is chiefly Spanish ; religion, Catholic.

EDUCATION.

30. Liberal provisions are made for education in the United States and some of the British provinces ; in Mexico there are few schools of a high order, but here, as well as in Central America and the West Indies, the mass of the people are very ignorant and superstitious. Among the Inhabitants of Iceland, education is far more general.

HISTORY—ENGLISH DISCOVERIES.

31. South America was discovered by Columbus in 1498, but North America was discovered the year previous, along the coast of Labrador, by John and Sabastian Cabot, two Italians sent out by the king of England, Henry VII. The next year Sabastian discovered Virginia; and in 1517, he entered one of the straits which leads into Hudson's bay.

SPANISH DISCOVERIES.

(1) Ponce de Leon, a Spaniard, discovered Florida in 1512. Yucatan was discovered by Fernandez de Cordova in 1517; and Mexico, by Grijalva in 1518. De Soto discovered the Mississippi in 1542.

FRENCH DISCOVERIES.

(3) Verranzi, a Florentine, sent out by Francis I., touched along the coast, in 1524, from North Carolina to Rhode Island. He afterward proceeded to Newfoundland and explored its shores. In 1534—5, James Cartier entered the gulf and river St. Lawrence, giving them their present name. He passed up as far as Montreal, and took possession of the country in the name of the king of France.

(4) These discoveries, with others which followed, became the foundation of the several claims of these nations to territories in North America.

NOTES TO TEACHERS.*

1. The pupil should, under no consideration, be required to commit the descriptive lessons so as to be able to recite them verbatim; nor should he be confined strictly to what is contained in the text, but should be allowed to express all he has learned on the subject, in his own language, whether that be obtained from the text-book or elsewhere.

2. The various statistical tables are not intended to be learned by the pupil only so much as the teacher may, with discretion, require; they should, however, be studied because much of great value to the student of geography, is to be learned from them.

It is customary to place these statistics at the end of the volume, but it has been my observation that they do not do much good when placed so far from the text, besides confusion and inconvenience result in referring to them. When placed in connection with the topic studied, the pupil is far more likely,

to study them and thus becomes acquainted with many important facts he would otherwise overlook.

3. The interest in geography may be increased by introducing a "question drawer." Allow the pupils to give questions to be answered by the class at some subsequent time, say each Monday: from 10 to 20 questions will be sufficient for one week.

4. Many topics can not be considered in the text-book, and such may be assigned to the pupils, to be reported on at the time of some subsequent lesson.

When the proper time comes assign to one or more pupils, the subject coffee, cotton, nutmegs, "Mason and Dixon's Line," the large bells of the world, and such other topics which will be of interest to a class in geography. These reports should be as free as possible from technicalities.

The teacher can add much to the whole by giving suitable and interesting incidents in connection with the subject.

CHAPTER III.

UNITED STATES.

MAP EXERCISES.—LOCATE THE FOLLOWING:

Capes:—Ann, Cod, May, Charles, Henry, Hatteras, Lookout, Canaveral, Sable, Conception, Arenas, Mendocino, Blanco, Disappointment, Flattery, Prince of Wales, Lisburne, Barrow, Hope, Fear.

Gulfs and Bays:—Cape Cod, New York, Delaware, Chesapeake, Tampa, Apalache, Mobile, Galveston, San Francisco, Saginaw, Bristol, Cook's Inlet, Green.

Straits and sounds:—Long Island, Albemarle, Pamlico, Florida, Juan de Fuca, Pugets, Behring's Norton, Kotzebue.

Islands:—Long, Nantucket, Martha's Vineyard, Dry Tortugas, Santa Barbara, Aleutian, St. Lawrence, Nunivak, Kadiak, Baranoff.

Peninsulas:—Cape Cod, Florida, East Maryland, Lower Michigan, Upper Michigan, Alaska, Kenai.

Mountain Ranges:—Apalachian, Alleghany, Blue, Blue Ridge, Cumberland, Green, Adirondack, Catskill, White, Rocky, Sierra Nevada, Cascade, Coast, Zuni, Mongollon, Wahsatch, Ozark, Steen Snow, Big Horn, Laramie, Uintah, Warners.

Mountain Peaks:—Washington, Pike's Peak, Black Dome, Longs Peak, Fremont's Peak, Wilson, Uncampahgre, Shasta, Diamond, Hood, Adams, St. Helens, Baker, Olympus, Whitney.

Plains, valleys, etc:—Mississippi, Atlantic, Coast Plain, Colorado, Great Basin, Great Plains of Columbia, Llano Estacado or Staked Plain, Death Valley.

Lakes:—Great Lakes, Superior, Michigan, Huron, Erie, Ontario, Champlain, Great Salt, Tulare, of the Woods, Rainy, Moosehead, Grand.

Rivers:—Mississippi, Arkansas, Red, Missouri, Ohio, Cumberland, Tennessee, Alleghany, Monongahela, Hudson, Connecticut, Delaware, Penobscot, Kennebec, Susquehanna, Potomac, Roanoke, Neuse, Pamlico, Cape Fear, Great Pedee, Santee, Savannah, Altamaha, St. Johns, Apalachicola, Flint, Mobile, Alabama, Tombigby, Sabine, Colorado, (Tex.), Trinity, Brazos, Rio Grande, Colorado, (Ara.), San Joquin, Sacramento, Columbia, Snake, Humboldt, Green, Grand, Yellow Stone, Kansas, Platte.

Miscellaneous:—What states are crossed by the 25° north latitude? by the 30° ? by the 35° ? by the 40° ? by the 45° ? What states are crossed by the meridian of Washington? by the 82° west of Greenwich? the 90° ? the 100° ? the 110° ? the 120° ? What capitals on or near the 30° north latitude? the 35° ? the 40° ? the 42° ? the 44° ? What is the difference of time between Washington and Boston? Columbus? St. Louis? Denver? San Francisco?

Relative Position:—In what direction is Maine from New York? Minnesota? Colorado? Texas? Ohio from Florida? Alabama? Texas? Delaware? Connecticut? Utah? Washington Ter.? Arizona? Arkansas? Missouri from Mississippi? New Jersey? Oregon?

Travels:—What states would you cross in going in a straight line from Hartford to Austin? to Wheeling? In going from New York to San Francisco? to Montgomery? To St. Paul? In going from Columbus to Pensacola? Topeka? to Yankton? to Olympia? Trace a water route from New York to New Orleans; to Chicago; From Boston to Washington; to Liverpool; to St. Petersburg; to Richmond; From Columbus to Nashville; to Fort Wayne; From Rochester to Oshkosh; to Duluth; to Denver.

DESCRIPTION. (EXCLUSIVE OF ALASKA.)

Position:—The United States are bounded on the north by British America, on the east by the Atlantic, on the south by the Gulf of Mexico and Mexico, and on the west by Mexico and the Pacific. They lie between the 25° and 49° north latitude, and between 67° and 124° west longitude.

2. Extent:—The length from east to west is about 2800 miles, and from north to south 1600 miles. Area exclusive of

Alaska, 3,027,000 square miles : with Alaska 3,604,000 square miles.

Distances from Washington :

New York.....	225 miles.	Astoria.....	2500 miles
Augusta, Maine.....	595 "	Quebec.....	840 "
New Orleans.....	1172 "	Havana.....	1300 "
Austin.....	1500 "	San Francisco.....	2457 "

3. Coast:—With the exception of the north-east the coast of the United States on the Atlantic and Gulf is low.

The general trend of the Atlantic slope is south-west, but there are four distinct curves : The first from the eastern coast of Maine to New York ; The second from New York to Cape Hatteras ; the third from Cape Hatteras to southern Georgia ; and the last extending thence to the southern end of Florida. The shores of the Pacific are mostly bold and rocky : they contain few harbors. The entire coast line measures 12,000 miles, exclusive of inlets, and 3450 miles of lake coast: including inlets about 24,000 miles. There are many safe and commodious harbors.

4. Capes:—There are numerous capes projecting into the sea.

The pupil should be required to locate as many as he is able from memory.

5. Gulfs and Bays:—The following is a list of the principal gulfs and bays:

	LENGTH.	BREADTH.	AREA.
Mexico.....	1000	800	800,000
Cape Cod:.....	35	25	600
New York.....	8	6	36
Delaware.....	55	3 to 25	100
Chesapeake.....	200	4 " 40	8,000
San Francisco..	55	3 " 12	325
Mobile.....	36	18	560

6. Straits and Sounds:—The strait of Florida separates Florida from the Bahamas. The strait of Juan de Fuca is on the north-west of Washington Territory. It is 100 miles long and 20 wide.

The principal sounds are as follows:

NA	LENGTH.	BREADTH.	AREA.	DEPTH.
Long Island.....	110	2 to 20	2000	Navigable.
Albermarle.....	55	4 " 15	600	Nav' but rath. shal.
Pamlico.....	75	25	1500	Navigable.
Pugets.....	75	10		Deep.
Vineyard.....	20	5	90	"
Nantucket.....	50	45	2000	Dangerous.
Norton.....	200			

ISLANDS.

7. The following is a list of the principal islands:

MOUNTAIN RANGES.

12. Plains, Plateaus:—Some of these have already been described. The most productive and largest is the Mississippi valley, containing nearly two-thirds of the territory of the United States; it is one of the most fertile tracts in the world, and is supposed

to be capable of sustaining a population of 500,000,000. The Great Basin lying between the Wahsatch and the Sierra Nevada is an extensive barren region from 4,000 to 6,000 feet high and embracing an area of 210,000 square miles. The Colorado plateau lies between the Rocky and the Wahsatch mountains; it is the highest plain in the United States, having an elevation from 6,000 to 7,000 feet.

13. Natural Curiosities:—The United States abounds in the romantic and sublime in nature. The most stupendous cataract, the most beautiful landscapes, the most gigantic plains, some of the most colossal peaks, and the grandest caverns are contained within her boundaries.

14. Lakes:—The lakes of the United States form a grand feature of our continent, and present the extraordinary spectacle of inland seas of fresh water, sufficient in extent to become the scene of battles between hostile navies, and highways of busy and thriving commerce. The following are the principal:

NAME.	LENGTH	BREADTH,	AREA	DEPTH	HEIGHT ab'v sea level.
Superior ..	430		32,000	1,000	603
Michigan ..	320		22,000	1,000	582
Huron.	280	105	21,000	800	582
Erie	250	60	9,600	204	573
Gr. Salt. ...	90	20 to 35	2,600	60	4,200
Champlain.	100	1 to 14		600	93
St. Clair ..	30	24	360	200	571
Lake of Wood	100				977

15. Rivers:—The United States is one of the finest watered countries on the globe. It contains about 25,000 miles of river navigation of which 20,000 are afforded by the vast Mississippi system; this is the longest river in the world and contains 1500 navigable tributaries.

NAME.	LENGTH	AREA bas'	MILES OF NAVIGATION.
Mississippi. . .	4,200	1,197,000	2200, to St. Paul.
Miss. proper. .	3,100		
Missouri	2,900	518,000	2600, to Fort Benton.
Arkansas.	1,500	189,000	650, to Fort Smith.
Red.	1,600	97,000	350, to Shreveport.
Ohio	950	214,000	950, to Pittsburg.
Hudson	350	12,000	160, to Troy.
Potomac	400		110, to Washington.
Delaware.	350	11,000	75, to Trenton.
Savannah.	550	10,000	230, to Augusta, 130 further by small boats
Mobile	45		45.
Colorado	1,000	223,000	500.
Rio Grande.	1,800	240,000	500, for small boats.
Sacramento. . .	350		250, to Red Bluff.
Columbia.	1,000	338,000	115, to Vancouver.
Yukon	2,000	200,000	1500, through the Rocky Mts.

16 Soil:—This is greatly diversified. Some portions are barren, but the greater part is highly prolific. In the north-east the soil is better adapted to grazing than to tilling. The "Mississippi Valley," as has been said, is one of extreme fertility. That portion lying between the Rocky Mountains and the Sierra Nevada is the most desolate region in the United States, though in many parts of this, good crops may be obtained by irrigation. Much of the eastern slope of the Rocky Mountains has a poor soil; it is however well adapted to grazing.

17 Climate:—Reaching through 25 degrees of latitude, the climate is greatly varied. In the north the cold of winter is extreme; this season lasting five months. The coldest place is said to be Pembina.

The average annual temperature varies from 76° in southern Florida to 36° in north-west Minnesota. It is much warmer in the Pacific slope than in corresponding latitudes on the Atlantic slope, owing to the warm winds from the ocean current, sweeping along the western shore. The climate of the western plateaus is dry and changeable, caused by the absence of moisture. Often at noon, the temperature is 70° or 80° above zero and sinks below the freezing point during the night. Along the southern and south-eastern coasts the climate during the heated term is unhealthy; but generally the climate of the U. S. is as favorable to health and longevity as that of any other part of the world. The greatest rainfall occurs in western Oregon, about 80 inches annually, the least in southern California, where on an average 20 inches falls each year. In the Mississippi Valley the average annual rainfall is from 24 to 50 inches.

18 Agricultural Productions:—The leading agricultural productions are wheat, oats, corn, potatoes, cattle, sheep, hogs, from the central states; hay, corn, rye, barley, oats, cattle, sheep, from the north-eastern states; cotton, corn, rice, tobacco, hemp, oranges, lemons, from the southern states; wheat, fruit, cattle from the western states.

19. Minerals:—The United States is exceedingly rich in minerals of almost all kinds. Gold and silver are found in large quantities in nearly all the western states and territories. Iron is common to most parts, coal exists in greater quantities than any other country. Tennessee and the New England states yield larger quantities of marble and granite. The lead regions are literally inexhaustible; the first embracing an extensive territory at the junction of the three states, Illinois, Iowa and Wisconsin; the second covering an area of 3,000 square miles in Missouri, a little south-west of St. Louis; other minerals are copper, zinc, salt, nickel, quicksilver, petroleum, etc.

20. Manufactures:—These are important and of great variety. As a manufacturing nation it ranks next to Great Britain, the value

of the products in 1880 being \$5,370,000,000. New York, Pennsylvania, Massachusetts, and Ohio rank as the first states in this branch of industry. The leading articles are agricultural implements, boots and shoes, clothing, cotton and woolen goods, liquors distilled and malt, soap and candles, iron wares, flour, sugar and molasses, prepared tobacco, etc.

21. Commerce:—The value of our commerce during the year 1880 was \$1,504,000,000; of which \$835,639,000 were exports, and \$667,955,000 imports, being next to Great Britain, the most extensive in the world.

About 57% of all the commerce of our country is conducted through the port of New York. The whole number of vessels employed is about 25,000. Besides the foreign commerce there is an immense inland trade carried on by means of the numerous railroads, canals, rivers and lakes. The exports are mainly breadstuffs, raw cotton, provisions, mineral oils, tobacco, cotton goods, cattle, tallow, furs, leather, sugar; imports, cotton, woolen, linen, silk goods, iron and steel manufactures, fancy goods, jewelry, precious stones, sugar, molasses, and cigars.

- | | |
|-------------------------|------------------------|
| | (1st. For Agriculture. |
| 22. Natural Advantages: | 2d. " Commerce. |
| | 3d. " Manufacturing. |

The pupil should be required to state the natural advantages of the United States.

23. Internal Improvements:—Canals are numerous and railroads cross the country in every direction. At present there are 104,000 miles of railway completed being nearly equal to that of all Europe, and 154,000 miles of telegraph lines. The National Road built by the general Government, extends from Cumberland, in Maryland, westward, crossing the states of Pennsylvania, Ohio, Indiana, to Missouri. The public roads, in general, are good, and bridges many of which are costly and elegant, cross the principal streams.

24. Animals:—The wild animals are no longer numerous in the older settled regions; the fox, wolf, wild-cat, panther, grizzly and other varieties of bears, are found in the uncultivated regions. Crocodiles, alligators, and other serpents are found in southern waters. The horse, cow, sheep, hog, mule, goat and the common barn-yard fowls, except the turkey, are not indigenous, but were brought from the Old World by the first settlers.

25. Inhabitants:—The inhabitants of the United States are composed chiefly of immigrants from Europe and their descendants. The *Aborigines* are fast disappearing before the onward march of the white man. There are many negroes in the southern states, who were formerly in a state of slavery but are now all free; they number about two-fifths of the population of this section.

26. Population:—The whole number of inhabitants by the last

census (1880) was 50,152,866 : of these 6,577,000 were colored, and 105,000 Chinese. There are besides 300,000 Indians not included in these figures.

CENSUS OF THE UNITED STATES, 1880.

STATES	TOT'L POP	WHITE.	COLOR'D	NATIVE.	FOREIGN	MALES.	FEMALES
Alabama	1,262,794	662,328	600,249	1,253,121	9,763	622,890	639,904
Arizona	40,441	35,178	138	24,119	16,022	28,202	12,236
Arkans.	802,564	591,611	210,621	792,269	10,295	416,383	386,181
Calif'n'a	864,686	767,266	6,168	572,006	292,680	518,271	346,415
Color'do	194,649	191,452	2,459	154,860	39,789	129,471	65,178
Conn.	622,683	610,884	11,428	492,879	129,804	305,886	316,797
Dakota	135,180	133,177	381	83,387	51,793	82,302	52,818
Delaw'r.	146,654	120,198	26,456	137,182	9,472	74,153	72,501
D.of Col	177,008	118,236	59,378	160,523	17,115	83,594	91,014
Florida	267,351	141,832	125,464	257,631	9,720	135,393	131,958
Georgia.	1,539,048	814,251	724,682	1,528,733	10,315	761,184	777,864
Idaho.	32,611	29,011	58	22,620	9,982	21,818	10,793
Illinois.	3,078,769	303,174	46,248	2,495,177	583,592	1,587,433	1,491,336
Indiana	1,978,362	1,009,094	38,098	1,843,597	143,765	1,010,676	967,686
Iowa	1,624,620	1,614,078	9,442	1,363,132	261,488	848,234	776,386
Kansas.	995,966	952,050	43,096	886,261	109,705	536,725	459,241
Kent'ky	1,648,708	1,377,187	217,401	1,589,237	59,471	832,676	816,032
Louis'ina	940,103	455,007	183,704	885,964	54,139	468,833	471,270
Maine	648,945	646,903	1,418	590,076	58,869	324,084	324,816
Mar'Ind	931,632	724,718	209,897	851,984	82,648	462,114	472,628
Mass.	1,783,012	1,764,004	18,411	1,339,919	443,093	858,475	924,538
Mich.	1,636,331	1,614,078	14,986	1,247,985	388,346	862,376	774,055
Min'sota	780,806	776,940	1,553	513,107	267,699	419,262	361,544
Miss.	1,131,592	470,371	650,337	1,122,424	9,168	567,137	564,455
Missouri	2,168,804	2,023,568	145,046	1,957,564	211,240	1,127,424	1,041,386
Mont'na	39,157	35,416	288	27,642	11,515	28,180	10,977
Nebraska	452,433	449,806	2,576	355,043	97,390	249,275	203,158
Nevada	62,265	53,574	467	36,623	25,642	42,113	20,252
N Hamp	346,984	346,264	640	300,961	46,023	170,575	170,406
N. Jersy.	1,130,983	1,091,047	38,796	909,398	221,587	559,823	571,166
N. Mex.	118,439	108,127	648	108,498	9,932	63,751	54,679
N. Y.	5,083,810	5,017,116	64,960	3,872,372	1,211,438	2,506,283	2,477,527
N. Car.	1,400,017	897,478	531,351	1,399,318	3,679	688,203	711,844
Ohio.	3,198,239	3,118,344	79,695	2,803,496	394,743	1,614,167	1,584,071
Oregon	174,707	163,087	486	144,327	30,044	103,388	71,379
Penn.	4,282,786	4,197,106	85,342	3,695,253	587,533	2,136,632	2,149,151
R. Is'nd	276,528	269,903	6,503	202,598	73,930	103,388	143,405
S. Car	995,622	391,224	604,275	987,981	7,641	490,469	505,153
Tenn.	1,542,463	1,139,120	402,091	1,525,881	16,582	769,371	773,086
Texas.	1,592,571	1,197,499	394,001	1,478,058	114,516	838,715	753,855
Utah	143,906	142,380	204	99,974	43,932	74,470	69,436
Verm'nt	332,286	331,243	1,032	201,349	10,946	166,888	165,398
Virginia	1,512,806	880,981	631,573	1,498,130	14,667	745,839	766,967
Wash'tn	75,120	67,349	375	59,259	15,861	45,977	29,145
W. Virg.	618,443	592,606	25,806	600,214	18,228	314,479	303,964
W'sconsn	1,315,480	1,309,622	2,724	910,063	405,417	680,410	635,374
Wy'mng	20,776	19,439	299	14,943	5,847	14,151	6,637
TOTAL	50,152,866	43,404,876	6,577,151	43,475,566	6,677,360	25,552,582	24,632,284

27. Occupation:—About five-sixths of the inhabitants are engaged in agriculture. Manufacturing, mining and commerce, employ many thousands of men and women. Every body, as a rule, is engaged in some useful occupation and beggars so common in oriental countries, are rarely seen.

28. Language:—The English is the prevailing language everywhere, but in many parts there is a large intermixture of Germans who still use their native tongue. In Louisiana the French language is spoken to some extent, and in the territory acquired of Mexico the Spanish is used.

29. Government:—The *government* of the United States is a federal republic, composed of 38 states, 10 territories and the District of Columbia. Each state is independent in its local affairs, and its government is patterned after that of the general government.

The government of the United States having been treated under the chapter on government, it will not be necessary to repeat it here.

30. Education:—This great instrument of human improvement is highly appreciated, and *National Education* is regarded, in all the states, as an object of first consideration. A system of free schools exists in all states, and colleges and seminaries are more numerous than in any other part of the world.

31. Religion:—All *religions* are tolerated in the United States, and every person is at liberty to worship God according to the dictates of his own conscience. The most numerous persuasions are the Baptists, Methodists, Presbyterians, and Congregationalists. There are also many Roman Catholics, Episcopalians, Universalists, Lutherans, Moravians, &c, to which may be added the sect called the *Mormons*.

STATISTICS.

DENOMINATION.	MEMBERS.	MIN'ST'RS.	DENOMINATION.	MEMBERS.	MIN'ST'RS.
Methodists	3,800,000	35,500	Rom. Cath'lic	1,000,000	4,000
Baptists	2,389,000	17,160	Disc of C'rst	600,000	3,500
Presbyterians	581,000	5,100	Epis. Pr'tstnt	345,000	3,400
Congregationalists	384,000	3,580	Mormon	100,000	175
Lutherans	738,000	3,300	Jews	300,000	175

32. Cities:—These are already numerous and some of them among the most populous in the world. The following is a list

of the leading cities of the United States, with their population to the nearest thousand, according to the last census 1880.

NAMES.	NO.	NAMES.	NO.	NAMES.	NO.
New York	1,206,000	Allegany	79,000	St. Paul	41,000
Philadelphia,	817,000	Indianapolis	75,000	Lawrence	59,000
Brooklyn	567,000	Richmond	54,000	Dayton	39,000
Chicago,	503,600	New Haven	33,000	Lynn	38,000
Boston	370,000	Lowell	29,000	Atlanta,	37,000
St. Louis	351,000	Worcester,	38,000	Denver	36,000
Baltimore	332,000	Proy.	37,000	Oakland,	35,000
Cincinnati	256,000	Kansas City	36,000	Utica,	34,000
San Francisco,	234,000	Cambridge	33,900	Portland	34,000
New Orleans	216,000	Syracuse	32,000	Memphis	34,000
Cleveland	169,000	Columbus	32,000	Springfield	33,000
Pittsburgh	150,000	Patterson	31,000	Manchester	33,000
Buffalo	155,000	Toledo,	30,000	St. Joseph,	32,000
Washington	117,000	Charleston	30,000	Grand Rapids,	32,000
Newark	136,000	Fall River,	29,000	Wheeling	31,000
Louisville,	124,000	Minneapolis	27,000	Mobile,	31,000
Jersey City,	121,000	Seranton	16,000	Hoboken	31,000
Detroit	116,000	Nashville	13,000	Harrisburg	31,000
Milwaukee	116,000	Reading	13,000	Savannah	31,000
Providence,	105,000	Hartford	13,000	Omaha	31,000
Albany	94,000	Wilmington,	12,000		..
Rochester,	89,000	Camden	2,000		..

HISTORY.

DISCOVERIES.

1. In the year 1498, Sebastian Cabot, an Italian in the employ of England, discovered Virginia. In 1520, *Verrazani*, also, an Italian, sent out by France, discovered the coast of North Carolina. He landed also near New York, and at New Port. In 1528, Narvaey, a Spaniard, discovered and took possession of Florida, in behalf of the king of Spain. The Hudson river was discovered by *Henry Hudson*, an English navigator, sent hither by some Dutch speculators.

SETTLEMENTS.

2. Various attempts were made to affect settlements in this quarter, but they all proved unsuccessful till 1607. At that time, about 100 persons arrived from England, and founded the colony of *Jamestown* in Virginia. This was the first English settlement within the United States. New York was settled by the Dutch in 1614; Massachusetts by the Puritans, in 1620; Rhode Island by Roger Williams, in 1636; and Connecticut about the same time; Georgia, the last of the thirteen original colonies, was settled in 1732.

ORIGIN OF THE UNITED STATES.

3. The United States had their origin in the thirteen original colonies, which combined, in 1775, against their mother country, and after a desperate struggle of eight years, achieved their independence. The first battle of the

revolutionary war was fought at Lexington, Mass., April, 19, 1775, where the enemy received a signal defeat.

CAUSES OF THE REVOLUTION.

4. About the year 1764, the British government began to impose severe and oppressive taxes upon the English colonies. The people remonstrated, and sent petitions to both parliament and king, but without effect.

THROWING OVERBOARD THE TEA, ETC.

5. In 1773, the people being angry at the tax imposed upon tea, refused to let that article be landed from the British ships. In Boston a party of men, disguised as Indians, went on board some vessels in the harbor, and emptied 340 chests into the water. The port of Boston was now closed by British parliament. This act brought on a crisis and the colonies prepared for war.

CLOSE OF THE WAR.

6. In Oct. 19, 1781, Gen. Cornwallis, the British commander, surrendered to Gen. Washington at Yorktown. After this event there was little fighting on either side. In November, 1782, preliminary articles were signed at Paris between the agents of Great Britain and America, which recognized the United States as a *free, sovereign and independent nation*.

THE CONSTITUTION.

7. Until the adoption of the present constitution, the government was administered under the *Articles of Confederation*, but this system was found imperfect and insufficient. A convention was therefore called, which met at Philadelphia, in May, 1787, and, after a session of four months, they formed and recommended to the people the present excellent constitution. This was adopted by the states and George Washington was elected first President of the Union.

OTHER EVENTS OF OUR HISTORY.

8. In the year 1800, the seat of government was *removed* from Philadelphia, to Washington, which has since been the capital of the United States. In April 1803, an immense territory called Louisiana, was purchased of France for \$15,000,000. On the 18th of June, 1812, Congress declared war against Great Britain, which lasted about 18 months and the British Lion had to yield a second time to American valor.

Immediately after this war, our government deemed it necessary to send a squadron into the Mediterranean, to chastise Algiers and the other Barbary States, which had committed piracies upon our commerce.

In 1818, *Florida* was obtained by treaty from Spain. *La Fafayette*, a brave and generous Frenchman, who had served in our armies during the Revolu-

tion, visited our country in 1824 and was everywhere received with acclamations of welcome by the people.

During James K. Polk's administration, war was waged with Mexico, which commenced in 1846, and ended in 1848; and the extensive territories of New Mexico, Arizona, California and some other portions of land, were ceded to the United States. The annexation of Texas, in 1845, was the immediate cause of war.

In the winter of 1861, the *War of the Rebellion* broke out and continued for four years. Slavery which had been the cause of the war, was abolished.

Abraham Lincoln was assassinated on the 14th of April 1865, and on the 3rd of June 1881, James A. Garfield met a similar fate, two of our most beloved presidents.

PRESIDENTS OF THE UNITED STATES.

George Washington	1789 to 1797—8 years;
John Adams	1797 to 1801—4 "
Thomas Jefferson	1801 to 1809—8 "
James Madison	1809 to 1817—8 "
James Monroe	1817 to 1825—8 "
John Quincy Adams	1825 to 1829—4 "
Andrew Jackson	1829 to 1837—8 "
Martin Van Buren	1837 to 1841—4 "
William Henry Harrison	1841 to —1 month
John Tyler	1841 to 1845—3yr. 11 "
James K. Polk	1845 to 1849—4 years
Zachary Taylor	1849 to 1850—1yr. 4 months
Millard Fillmore	1850 to 1853—2yr. 8 "
Franklin Pierce	1853 to 1857—4 years
James Buchanan	1857 to 1861—4 "
Abraham Lincoln	1861 to 1865—4yr. 1 month
Andrew Johnson	1865 to 1869—3 " 11 "
Ulysses S. Grant	1869 to 1877—8 years
Rutherford B. Hayes	1877 to 1881—4 "
James A. Garfield	1881 to 6 months
Chester A. Arthur	1881, present incumbent.

STATISTICS OF PRODUCTS, 1880.

LEADING STATES IN ORDER.

Wheat, bushels, 160,000,000.	Ill., Ind., O., Mich., Minn.
Barley, " 44,000,000.	Cal., N. Y., Wis., Io., Minn.
Buckwheat, " 12,000,000.	N. Y., Pa., N. J., Mich., Mo.
Corn, " 1,756,000,000.	Ill., Ia., Mo., Ind., &
Oats, " 408,000,000.	Ill., Ia., N. Y., Pa., Wis.
Rye, " 20,000,000.	Pa., Ill., N. T., Wis., Ind.
Cotton bales, 6,589,000.	Ga., Ala., Tex., Miss., S. C.
Sugar cane, Acres, 228,000.	Ia., Ga., Tex., Fla., Ala.
Tobacco, Acres, 539,000; lbs. 473,000,000.	Ky., Va., Pa., O., Tenn.
Rice, pounds, 110,131,000.	S. C., Ga., La., N. C., Miss.
Bituminous coal, tons, 41,000,000.	Pa., Ill., O., Md., W. Va.
Sugar, hogsheads, 179,000.	Ia., Tex., Fla., Ga., S. C.
Molasses, gallons, 16,573.	Ia., Ga., Fla., Tex., Ala.
Gold, Total Product, \$36,000,000.	Cal., Nev., Dak., Col., Mont.
Silver, " 37,700,000.	Cal., Nev., U. T., Mont., Ariz.

CHAPTER IV.

NEW ENGLAND.—MAP EXERCISES.

CAPES.

1. Cod, Ann, Elizabeth.

BAYS.

2. Massachusetts, Cape Cod, Buzzards, Narragansett, Quonset, Casco, Damariscotta, Muscongus, Penobscot, Isle au Haut, Blue Hill, Frenchmans, Machias, Passamaquoddy.

SOUNDS.

3. Nantucket, Vineyard, Long Island.

ISLANDS.

4. Block, Rhode Island, Nantucket, Marthas Vineyard, Mt. Desert, Deer, Swans.

PENINSULAS.

5. Cape Cod.

MOUNTAIN RANGES.

6. Green, White, Hoosic, Taconic, Height of Land.

MOUNTAIN PEAKS.

7. Washington, Adams, Mars Hill, Katahdin, Sunapee, Monadnock, Kersarge, Mansfield, Camels Hump, Holly, Ascutney, Killington, Tom, Holyoke, Wachusett.

LAKES.

8. Moosehead, Chesuncook, Milinokett, Chamberlain, Grand, Schoodic, Cleveland, Moosetockmaguntic, Umbagog, Sebago, Squam, Winnipiseogee, Sunapee, Memphremagog, Champlain.

RIVERS.

9. St. John, St. Croix, Penobscot, Kennebec, Androscoggin, Saco, Piscataqua, Merrimac, Thames, Connecticut, Housatonic, Onion, Lamoille.

CITIES.

10. Augusta, Portland, Bangor, Bath, Brunswick, Saco, Con

cord, Portsmouth, Manchester, Nashua, Hanover, Montpelier, Burlington, Rutland, Boston, Cambridge, Plymouth, Lowell, Lawrence, Springfield, Worcester, Lynn, Salem, Taunton, Providence, Newport, Hartford, New Haven, New London, Stonington, Bridgeport, Stamford.

RELATIVE POSITION.

11. In what direction is Boston from Hartford? from Providence? Worcester? Burlington? Concord? Augusta? Cape Cod? Cape Ann?

TRAVELS.

12. Trace a water route from Boston to Providence; to Hartford; Burlington; Concord; Bangor; Quebec; Buffalo.

MISCELLANEOUS.

13. What is the latitude of each of the capitals? the longitude of the same? By the scale of miles, what is the distance of Portland from Cincinnati? from Montpelier? Albany? Quebec. What is the difference of time between Boston and Bangor? Boston and Albany? Bound each of the New England states.

DESCRIPTION.

POLITICAL DIVISIONS.

STATES.	NO. OF CO'S.	STATES.	NO. OF CO'S.
Maine.	16	Massachusetts . . .	14
New Hampshire . .	20	Rhode Island . . .	5
Vermont.	14	Connecticut. . . .	8

POSITION.

2. The New England States occupy the north-eastern portion of the United States, and are bounded on the north by the Dominion of Canada; on the east by New Brunswick and the Atlantic Ocean; on the south by the Atlantic and Long Island sound; and on the west by New York and Quebec.

LATITUDE AND LONGITUDE.

3. They lie between 41 and $47\frac{1}{2}$ degrees north latitude and between 67 and $73\frac{1}{2}$ degrees west longitude.

EXTENT.

STATES.	GROSS AREA.	WATER SURF'CE	LAND SURF'CE	SIZE AS COM- PAR'D WITH U.
Maine	33,040	3,147	29,895	1
New Hampshire	9,305	308	9,005	1
Vermont	9,565	431	9,135	1
Massachusetts	8,315	275	8,040	1-5
Rhode Island	1,250	165	1,085	1-40
Connecticut	4,990	145	4,845	1

5. The following is a table of distances from Boston :

Quebec	400	Portland	110
Montreal	300	Concord	65
Houston	350	Montpelier	160
Calais	340	Hartford	100
Bangor	230	New Haven	134
Augusta	163	Providence	10

CHARACTERISTICS.

6. These states have thus been characterised:

New England hath a climate cold.
A rugged soil and mountains bold;
But yet her hills are filled with care;
Her villages are bright and fair,
The church's spire decks every scene,
The schoolhouse every village green,
While busy factories ply the wheel,
And commerce speeds the adventurous keel.
The fisherman defies the gale:
The bold harpooner strikes the whale;
The hunter roams the forest track;
And each his gathered spoil brings back
To *Tankee Land*, his cherished home,
Blest with his store, no more to roam.

COAST.

7. This is much indented by numerous bays, furnishing many miles of navigable waters, and great facilities for commerce. Maine stretches from northeast to southwest 200 miles but, including the indentations, presents a shore line of 2500 miles, and because of her numerous inlets is called "*hundred harbored Maine*." Massachusetts bay is the scene of active shipping enterprise.

ISLANDS.

8. Martha's Vineyard and Nantucket are the largest islands; they have a sandy soil. Mount Desert, south of Maine, is noted for its beautiful scenery, and is a favorite summer resort. Rhode Island, in the southern part of Narragansett bay, is noted for its extreme fertility.

SURFACE.

9. This is greatly diversified. In the interior it is mountainous, with narrow vales between. The land along the sea shore presents an irregular surface of hills and ridges, with flats of moderate

extent. The numerous *lakes* and *ponds* of New England form a charming feature of the scenery.

MOUNTAIN RANGES.

10. These states are crossed, along the western boundary by the *Green Mountain* range. The *Taconic* and *Hoosic* ranges trend across the western part of Massachusetts. The latter is noted for the celebrated Hoosic tunnel, about five miles long, on the Boston and Albany railroad.

MOUNTAIN PEAKS.

11. The following are the principal peaks:

NAME.	HEIGHT.	NAME.	HEIGHT.
Mars Hill.....	2,000.	Mansfield.....	4,430.
Katahdin.....	5,385.	Killington.....	4,221.
Washington.....	6,288.	Camel's Hump.....	4,188.
Adams.....	5,794.	Saddle.....	3,500.
Jefferson.....	5,714.	Wachusett.....	2,000.

VALLEYS.

12. The Connecticut valley is the most extensive and fertile in New England. The valley of the Merrimac consists of sandy plains covered with pines. Some of the river valleys of Maine are broad, except near the sea. The Atlantic coast plain is from 50 to 75 miles wide.

NATURAL CURIOSITIES.

13. The mountains, waterfalls, wild forests, and myriads of lakes, and cool summer climate, make Maine an attractive place for tourists. The bold and rugged coast and picturesque islands are well known to artists. New Hampshire, on account of its beautiful scenery, is called the Switzerland of America. The White Mountains and vicinity are especially characterized. Vermont and Massachusetts are noted for their scenery. From Mount Wachusett, a fine view is presented; Tom, Holyoke and Saddle peaks are well known summer resorts. The Ice Hill, a narrow and deep ravine of great wildness, in Stockbridge county, is a place where the ice remains during the whole year. In New Marlborough, there is a rock of 30 or 40 tons weight, so nicely balanced that it can be moved with a finger.

LAKES.

14. The following list contains the principal lakes:

LAKES.	LENGTH	BREADTH	REMARKS.
Moosehead.....	35	10	Deep and navigable. On the west side is Mt. Kineo 1200 feet high.
Chesuncook....	20	2	Contains some fine scenery.
Memphremagog	30	1 to 4	It is much visited by tourists.
Winnipiseogee..	22		Deep and surrounded by very beautiful mountain scenery.
Umbagog.....	12	1 to 4	Drained by the Androscoggin river.
Champlain.....	100	1 to 14	600 feet deep and remarkable for grand and beautiful scenery.
Schoodic.....			A series of lakes in the southeastern part.
Sebago.....	12	8	Empties its waters into Casco Bay.
Grand.....	25	4	Contains excellent salmon and trout.

Maine is said to contain no less than 1700 lakes having an area greater than one square mile.

RIVERS.

15. One remarkable feature of New England states is the number of streams of water. Nearly all afford valuable water power. It is said no other river in the world drives as many factories and mills as the Merrimac. The scenery in many instances is extremely picturesque.

RIVERS.	LENGTH	AREA BASIN	MILES OF NAVIGATION.
Connecticut....	350	10,600	60, to Hartford.
Merrimac.....	150		12, to Haverhill.
Penobscot.....	300		60, to Bangor.
Kennebec.....	200		80, to Waterville.
St. Croix.....	75		

SOIL.

16. Much of the soil is good, yet it requires diligent cultivation to procure good crops. The river valleys are fertile. The eastern part of Massachusetts has a sandy and strong soil, and is not at all adapted to profitable farming.

17. The *climate* is severe, and it is necessary to make careful preparations for the long winters. North of the 45th parallel little can be produced from the soil on account of the rigid cold. The indifference of the soil and the severity of the climate have compelled the people to be industrious, frugal, and enterprising.

AGRICULTURAL PRODUCTIONS.

18. The leading product of agriculture in New England is grass for grazing and hay; besides this, wheat, Indian corn, oats, barley, potatoes, &c. are produced in considerable quantities.

Horses, cattle, sheep, and hogs, are raised in great numbers. The chief fruits are apples, pears, peaches, plums, strawberries, currants, &c.

MINERALS.

19. Iron is abundant in Connecticut, Vermont, and Maine. Copper and zinc are found in various places, chiefly in Vermont and Connecticut. Coal exists, but in limited quantities and of inferior quality.

Granite, marble, and limestone are scattered profusely over almost this entire section: the former exists in such quantities in New Hampshire that it is called the *Granite State*. Oil-stone and slate-stone, as well as stone from which grind-stones are made, are found at various points.

MANUFACTURES.

20. These are varied and of great value. They consist chiefly of cotton goods, woolen goods, furniture, wooden ware, leather, boots and shoes, paper, and paper articles, fire-arms, musical instruments, hardware, machinery, clocks and watches, ships, maple sugar, butter, cheese, etc.

COMMERCE.

21. The commerce of the New England states is very extensive: Boston is the leading port. The exports are grains, cattle, flour, beef, pork, ice, granite and manufactured goods: the imports are wool, hides, rags, European wares, tropical fruits, fish, fire-wood, coal, eggs, gypsum, potatoes, wheat, and flour, &c. Massachusetts ranks as the fourth state in the value of her commerce.

INTERNAL IMPROVEMENTS.

22. Many important railway lines run in all directions. Massachusetts has more miles of railway in proportion to her area, than any other state in the Union. Public buildings of all kinds are numerous and many of them costly and elegant.

Maine,	miles of Railway...	1,094
New Hampshire,	" " "	897
Vermont,	" " "	836
Massachusetts,	" " "	2,250
Rhode Island,	" " "	153
Connecticut,	" " "	31
TOTAL,	— — — — —	6,161

ANIMALS.

23. In the wild and uninhabited parts the native animals are

still to be found ; viz: The bear, deer, fox, wolf, wildcat, raccoon, groundhog, skunk, weasel, beaver, etc.

INHABITANTS.

24. The people of these six states are almost wholly of English descent. Their manners and customs are essentially English, though a tinge of Puritanism still lingers among them. The term *Yankee*, which appears, originally, to have been an imitation of the Indian's *Tankees* (English), is, in this country, applied to the the people of New England. In Europe, all our people are designated by this title.

25. The population of these states is as follows:

STATES.	POP. 1870	POP. 1880	WHITE	C'L'RD	POP. to sq. mi
Maine	527,000	649,000	647,000	1,450	11 ¹ / ₆
New Hampshire.. ..	318,000	347,000	346,000	685	38 ³ / ₄
Vermont.....	331,000	332,000	331,000	1,000	26 ¹ / ₂
Massachusetts.....	1,415,000	1,783,000	1,776,000	19,000	182
Rhode Island.....	217,000	277,000	270,000	6,500	164
Connecticut.....	537,000	623,000	611,000	11,500	130

OCCUPATIONS.

26. The coast being indented with numerous harbors, the inhabitants have, therefore, been invited to maritime enterprise. They are largely engaged in the *cod*, *mackerel*, and *whale* fisheries and their commerce is very extensive. Their manufactures, too, are numerous and on a liberal scale. Quarrying and gathering of ice are leading pursuits. Thus industry has conquered the obstacles of nature and climate, and scattered wealth and plenty over a region of comparative sterility. Though the soil in most parts is naturally poor, it has been enriched by careful cultivation, and the traveler can hardly find in any land a people living in a state of equal comfort. If there are not many who are very rich, there are few who are poor.

LANGUAGE.

27. The English has always been the language of the people, with little intermixture of foreign tongues.

EDUCATION.

28. New England has long been celebrated for its colleges and schools. Every person has the means of obtaining a good English education ; and very few natives of the soil are unable to read and write with facility.

The following is a list of the leading colleges with statistics from the latest authority:

NAME.	LOCATION.	DENOMINATION	STUDENTS	vol. in lib.	FOUNDED.
Harvard.....	Cambr'ge Mas.	None	637	134,000	1638
Yale.....	N. Haven Con.	Congregational	517	86,000	1700
Brown Univ'rs.	Providence R. I.	Baptist	224	42,000	1765
Amherst.....	Amherst Mas.	Congregational	268	28,000	1821
Weslyan Un..	Middl't'n Con.	Methodist	190	22,000	1831
Bowdoin.....	Brunswick Me.	Congregational	136	35,000	1798
Williams.....	Wilimst'n Mas.	"	119	15,000	1893
Dartmouth....	Hanover N. H.	"	264	33,000	1770
Un. of Vermont	Burlington V. T.	None	47	15,000	1801
Middleburg....	Middleb'rg V. T.	Congregational	54	12,000	1797
Bates.....	Lewistown Me.	Baptist	164	5,000	1863

RELIGION.

29. The people of this section are in a high degree *moral* and *religious*. Churches are numerous, and the sabbath is strictly observed. Charitable societies of various kinds are common, and lyceums for lectures and public instructions are found in the principal towns, and, in many villages. The temperance societies have done much toward checking the baneful use of intoxicating drinks. The leading religious sects are the Congregationalists, Baptists, and Methodists.

CITIES AND TOWNS.

30. Though the natural aspect of New England is rough and forbidding, industry and taste have dotted it over with cheerful and thriving towns and villages. *Boston* is the great commercial emporium of New England: it contains many things of interest. Because of its literary institutions, it is sometimes called the *Athens of America*. *Lowell and Lawrence* on the Merrimac are important cotton manufacturing centres. *Lynn* is noted for its manufacturing of shoes. *Springfield* for paper and firearms. *Burlington* for its lumber. *Rutland* for its marble and manufacturing. *Portland* for its trade. *Bangor* for its commerce and shipbuilding.

Newport is a favorite summer resort. Its climate is commended for its mildness and equability.

Providence, the second city of New England, is delightfully situated around a little lake called "the Cove." It is the seat of Brown University, and contains one of the largest and finest hotels in the United States.

New Bedford is noted for the elegance of its private residences and as one of the richest cities in proportion to its population of any in the Union. This city has been engaged in the whale fish-

eries more largely than any other city in the world, but the industry has declined somewhat.

Many towns on Long Island Sound are also extensively engaged in the fisheries; among these are Stamford, Norwalk, Bridgeport, Saybrook, etc.

Population of principal cities.

CITIES.	POP.		POP.	CITIES.	POP.
MAINE.		Burlington.....	11,000	RHODE ISLAND.	
Portland.....	34,000	St. Albans.....	7,000	<i>Providence</i>	105,000
Lewis.....	19,000	<i>Montpelier</i>	3,000	Pawincket.....	19,000
Bangor.....	17,000	MASSACHUSETTS.		<i>Newport</i>	16,000
Biddeford.....	13,000	<i>Boston</i>	363,000	CONNECTICUT.	
Auburn.....	10,000	Lowell.....	59,500	New Haven.....	63,000
<i>Augusta</i>	9,000	Worcester.....	58,000	<i>Hartford</i>	43,000
NEW HAMPSHIRE.		Cambridge.....	53,000	Bridgeport.....	29,000
Manchester.....	33,000	Fall River.....	49,000	Norwich.....	21,000
<i>Concord</i>	14,000	Lawrence.....	39,000	Waterburg.....	20,000
Nashua.....	13,000	Lynn.....	38,000	Meriden.....	18,000
Dover.....	13,000	Springfield.....	33,000	Norwalk.....	14,000
Portsmouth.....	10,000	Salem.....	28,000	New Britians.....	14,000
VERMONT.		New Bedford.....	27,000		
Rutland.....	12,000	Holyoke.....	22,000		

HISTORY.

SETTLEMENT.

31. The history of New England affords many passages of deep interest. It was first settled by some English people called *Puritans*, who fled hither from religious persecutions. They landed at Plymouth, December 22, 1620, and thus laid the foundation of what has since become the state of *Massachusetts*.

CONNECTICUT AND RHODE ISLAND.

32. The first settlements in *Connecticut* were made by emigrants from Massachusetts, in 1636. Roger Williams, a Baptist minister, made the first settlement in *Rhode Island*, in this year.

The other portions of New England became gradually occupied, chiefly by people from New England, or by the descendants of the earlier settlers of this quarter. Maine and New Hampshire originally were a part of Massachusetts.

INDIAN WARS.

33. For a time the colonists were at peace with the Indians: but at length war broke out. On several occasions the colonists came near being exterminated. In 1675 a celebrated chief named *Philip*, stirred up the savage tribes, and for three years a bloody contest was maintained. But the whites at last prevailed, and the Indians gradually disappeared from the land of their fathers.

REVOLUTIONARY WAR.

34. A century after Philip's war the Revolution commenced with the battle of Lexington, and the celebrated contest on Bunker Hill followed, June

17, 1775. Throughout the conflict with Great Britain, which lasted eight years, and which resulted in the independence of the United States, the people of New England bore an active and important part.

SETTLEMENT OF OTHER STATES.

35. The inhabitants of New England have also largely contributed to the settlement of the more western states. A considerable portion of New York, Ohio, Indiana and Illinois were first occupied by people from Connecticut and Massachusetts.

THE MIDDLE ATLANTIC STATES.

MAP EXERCISES.

1. CAPES.—Henry, Charles, Henlopen, May, Sandy Hook, Montauk Point.

GULFS AND BAYS.—New York, Delaware, Chesapeake, Raritan, Newark.

CHANNELS AND SOUNDS.—The Narrows, East River, Long Island.

ISLANDS.—Long Island, Coney, Governor's.

MOUNTAIN RANGES.—Blue, Blue Ridge, Alleghany, Adirondack, Catskill, Cumberland, South, Rich, Chestnut Ridge, Laurel Ridge.

MOUNTAIN PEAKS.—Marcy, McYntire, Peaks of Otter.

LAKES.—Champlain, George, Oneida, Skeneateles, Owasco, Cayuga, Seneca, Canandaigua, Chautauqua, Erie, Ontario, Otsego.

RIVERS.—Hudson, St. Lawrence, Black, Racket, Grass, Salmon, Oswego, Genesee, Susquehanna, North Branch, South Branch, Juniatta, Ohio, Alleghany, Monongahela, Great Kanawha, Big Sandy, Mohawk, Delaware, Schuylkill, Lehigh, Potomac, Shenandoah, Rappahannock, York, James, Appomattox, Patuxent.

CITIES.—New York, Philadelphia, Brooklyn, Baltimore, Buffalo, Washington, Rochester, Oswego, Albany, Troy, Rome, Utica, Schenectady, Syracuse, Dunkirk, Watertown, Sing Sing, Hudson, Poughkeepsie, Newburg, West Point, Harrisburg, Reading, Lancaster, Pittsburgh, Alleghany, Erie, Oil City, Scranton, Easton, Trenton, Newark, Jersey City, Patterson, Camden, Princeton, Dover, Wilmington, New Castle, Annapolis, Frederick, Hagerstown, Cumberland, Harper's Ferry, Wheeling, Charleston, Parkersburg, Richmond, Fredericksburg, Norfolk, Petersburg, Charlottesville, Strasburg, Lexington, Lynchburg, Alexandria.

RELATIVE POSITION.—In what direction is Rochester from New York? from Buffalo? from Richmond? from Albany? from Baltimore? from Washington? from Harrisburg? from Wheeling? from Dover? from Norfolk?

TRAVELS.—What states would you cross in traveling by land from Richmond to Erie? to Dover? to Albany? to Parkersburg?

Trace a water route from Washington to Baltimore; to Richmond; to Trenton; to Rome; to Rochester; to Warren.

MISCELLANEOUS.—What is the latitude and longitude of New York? of Philadelphia?

Give the latitude of the capital of each state. Give the longitude of the same.

What is the difference in time between New York and Washington? between Washington and Wheeling? What is the altitude of the sun at noon in New York, on the 10th of May? on the 24th of February?

DESCRIPTION.

POLITICAL DIVISIONS.

1. This section of the United States embraces New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, West Virginia, and the District of Columbia.

POSITION.

2. The New England states and the Atlantic ocean are on the east; North Carolina and Tennessee on the south; Kentucky, Ohio, lakes Erie and Ontario on the west.

LATITUDE AND LONGITUDE.

3. The Middle States lie between $26\frac{1}{2}^{\circ}$ and 45° north; and extend from about $73\frac{1}{2}^{\circ}$ to 84° west longitude.

4. These states have thus been characterized:

The Middle States for wealth renowned,
By golden harvests yearly crowned,
Exhaustless mines within their breast,
Favorites of nature stand confessed!
Rich in themselves, still art hath made
The world pays tribute to their trade;
Rivers, canals and railroads pour
Into their lap a golden store,
While various seas rich burdens bear,
To crowd their marts with all that's rare.

5. EXTENT, ETC.—

	AREA.	*	POP. 1870.	POP. 1880.	PERCENT INCREASE	POP. TO SQ'R M.
New York	47,620	7-6	4,383,000	5,084,000	16	167
Pennsylvania	45,000	1-8	3,522,000	4,283,000	21	95
New Jersey	7,459	3-19	966,000	1,131,000	25	152
Delaware	1,960	1-21	125,000	147,000	17	75
Maryland	9,800	1-4	781,000	935,000	19	95
Virginia	40,125	1	1,225,000	1,513,000	23	37
West Virginia	24,650	3-5	142,000	618,000	40	25
District of Columbia	60		132,000	178,000	35	5,966

* Relative size, Ohio being 1.

COAST.

6. This is mostly low, sandy and level. The principal bays are New York, Raritan, Delaware and Chesapeake. The Delaware, fifty miles from its mouth, expands into a bay from ten to thirty miles, the navigation of which is rendered somewhat difficult by shoals. The Atlantic shores of New Jersey, in some places, are covered with a fine, white sand, which form delightful drives and promenades, and make a solid floor to the sea; it is this which has made its beaches renowned sea-bathing resorts. The most celebrated are Long Branch, Cape May, and Atlantic City.

CAPES.

7. All the capes have light-houses as safeguards to the mariner. Charles and Henry, at the entrance of the Chesapeake; and May and Henlopen, at the entrance of Delaware bay, are the principal capes.

ISLANDS.

8. *Long Island* is 120 miles long and 20 wide and it is noted for its orchards. *Manhattan Island* contains the city of New York. It is 14 miles long and $2\frac{1}{2}$ wide. *Governor's Island* is in the New York harbor and contains a fort called Columbus. *Grand Island* is in the Niagara River above the Falls. The *Thousand Isles* are at the lower end of lake Ontario and the head of the St. Lawrence River. There are about 1500 hundred of these, forming the most numerous collection of islands in the world. Many of them have been purchased by wealthy people who have built elegant summer residences on them; the scenery about them is grand.

SURFACE.

9. The *Atlantic Coast Plain* extends from the bay of New York, where it is only a few miles wide, to the south-west; in lower Virginia it is 175 miles wide. The *western portion* of this section, except Virginia, is generally level. The *remainder* is

much broken and diversified by mountains and valleys. *Dismal Swamp* is in the south-east corner of Virginia: it is about 30 miles long by 12 broad.

MOUNTAINS.

10. The *Alleghanies* which extend to the width of two hundred miles in Pennsylvania, the *Blue Ridge* and *Cumberland* mountains in Virginia, are the principal chains.

PEAKS.

11. The peaks of Otter, 4,000 feet high, are in the Blue Ridge mountains: Mount Marcy, in the Adirondack mountains, is 5,400 feet high.

NATURAL CURIOSITIES.

12. The *Falls of Niagara*, which are partly in New York, form the most stupendous cataract in the world.

They are divided by Goat Island into two divisions: the American side is about 1,000 feet wide and the Canadian 2,000, and both plunge over rocks to the depth of 162 feet. The shock causes the earth to tremble for a considerable distance around, and a cloud of vapor rises over the spot, which is sometimes visible for sixty or seventy miles.

The *Falls of Trenton* 12 miles north of Utica are esteemed among the finest in the world. At Rochester the *Genesee* has a fall of 96 feet. Besides these there are numerous other cataracts scarcely less beautiful, in many different places.

The lakes, George, Cayuga, Seneca, &c., are fine sheets of water, and renowned for the charming landscape along their banks. The *scenery* of the *Hudson* is grand and beautiful. *Harper's Ferry*, according to Jefferson, contains scenery of such romantic loveliness that one could afford to cross the Atlantic to witness it.

Virginia rivals any other state in the beauty of her mountain grandeur.

Wierds, *Mammoth*, *Blowing* and *Saltpeter* caves are worth visiting. The *Natural Bridge* in Rockbridge county is 90 feet long and 240 feet above the water.

From the *Peaks of Otter* you have a full view to the Atlantic Ocean and long ranges in other directions, presenting to the eye the loveliest of landscapes.

So numerous are the objects of interest it would require a volume to describe all of them.

RIVERS.

13. The rivers of this region, especially the *Hudson*, the *Delaware*, the *Susquehanna*, the *Potomac* and *Ohio*, afford peculiar

facilities for carrying the products to the markets of the great commercial cities.

RIVERS.	AREA OF BASIN.	LENGTH.	MILES NAVIGABLE
Hudson	12,000	350	160, to Troy.
Delaware	11,000	350	75, to Trenton.
Susquehanna	25,000	400	
Potomac		400	110, to Washington.
James		450	150, to Mouth Appomattox.
Ohio	214,000	950	950, to Pittsburg.
Monongahela		200	150, to Fairmount.
Alleghany		300	250, to Orlean N. Y.

LAKES.

14. The Great Lakes, *Ontario* and *Eric*, which form the northern boundary of the Middle States, constitute an important feature in their physical geography, and largely contribute to their commercial advantages. The small lakes of New York give additional charm to the scenery of that state, and afford some advantages for navigation.

LAKES.	LENGTH.	BREADTH.	REMARKS.
Eric	250	60	Greatest depth 720 feet
Ontario.	190	55	" " 600 "
Champlain	100	2 to 14	Shores remarkable for its beautiful scenery.
George	34	1 to 4	Remarkably transparent.
Oneida	20	6	It abounds in fish.
Cayuga	38	2 to 3	Its banks consist of rocks and ravines.
Chautauqua.	18.	1 to 1½	Drained by the Alleghany.

SOIL.

15. With such an extent and diversity of surface there must be great variety. The *valleys* are extremely fertile, while the hilly sections have in general a thin soil. The northern part of New York is unproductive. In many parts as in New Jersey, Delaware and other places, the soil has been made very fertile by use of marl, a kind of a green sand found in great quantities in New Jersey.

CLIMATE.

16. The climate of northern New York is exceedingly cold, but it becomes rapidly warmer until we arrive at southern Virginia where the temperature is warm; snow sometimes falls but melts in a few hours. On the *lowlands* of Maryland and Virginia the climate is unhealthy during the summer months.

AGRICULTURAL PRODUCTIONS.

17. The original vegetation is greatly diversified. The soil and climate are peculiarly fitted to all kinds of grain. The valleys of the Genesee, Susquehanna and Shenandoah are famous for their wheat. Rye, oats and barley are raised in abundance. Corn can be produced everywhere except in northern New York.

owing to the rigor of the climate. Fruits, such as apples, pears, peaches, etc., are among the leading products. Virginia is next to Kentucky in the production of tobacco; Maryland produces about one-third as much as the former. New York, in the value of its live stock, and in the production of milk, butter, cheese, hay, Irish potatoes, and hops exceeds any other state.

MANUFACTURES.

18. In this branch of industry New York ranks first in the Union, and Pennsylvania second. The other states of this section are also engaged quite extensively in manufacturing. The abundance of minerals, the vast water power, and the unsurpassed commercial facilities, have made this region to rank among the leading manufacturing centers of the globe. Cotton and woollen goods, clothing, machinery of all kinds, boots and shoes, leather, furniture, musical instruments, paper, books, hardware, railroad iron, chemicals, cigars and prepared tobacco, are some of the most important articles.

MINERALS.

19. In the production of coal, iron and petroleum Pennsylvania takes the lead; it produces two-thirds of all the coal, and three-fifths of all the iron in the United States. Between the Susquehanna and the Delaware rivers are the anthracite coal-fields, the value of whose products is about one-half the entire yield of our country. The coal-fields of this state cover an area of 13,000 square miles; those of West Virginia 16,000, but they are, as yet, not much worked. Virginia and Maryland are also rich in coal. Other minerals are zinc, marl, and sand for glass making; the first two are found mainly in New Jersey. Building stone is plenty in all parts. Excellent marble, as well as copper, are found in Virginia.

COMMERCE.

20. New York, Philadelphia, and Baltimore are the great marts of foreign trade. Forty-five per cent, of all the exports of the United States, and 68 per cent. of all the imports pass the first named city. The commerce of Baltimore is one-sixth that of New York, and that of Philadelphia about one-tenth.

NATURAL ADVANTAGES

21. The pupil should be required to summarize these.

ANIMALS.

22. The domestic animals are about the same as elsewhere in the United States. In the uncultivated regions, occasionally, some of the native wild animals are met with. The fisheries in the lakes

of New York are valuable, white-fish, shad, and trout are abundant. In the Chesapeake bay, and the inlets, bays and sounds along the coast are the favorite habitat of the oyster. Of these, Maryland furnishes more than any other state.

INTERNAL IMPROVEMENTS.

23. No part of the Union presents more extensive and numerous *canals* and *railroads* than the Middle States. The Erie canal is the first and most important canal in the United States. Its extent from Buffalo to Albany is 350 miles. Champlain canal connects lake Champlain with the Hudson river at Troy, and is 66 miles long. The Delaware and Hudson river canal is 108 miles long. The *Hudson River*, the *New York Central*, the *Erie*, the *Pennsylvania Central*, the *Baltimore and Washington*, and the *Baltimore and Ohio* are the most prominent lines of railway.

Many elegant and costly bridges span the larger streams. The public roads are the best in the country.

INHABITANTS.

24. The Middle States were settled by people from different countries: England, Holland, Germany, Denmark, and Sweden. From this circumstance the population has always been more mixed than in New England. Those of English descent are, however, by far the largest class. In some villages, the original language, manners and customs of the settlers are to be found, with little modification of time and circumstances. In Pennsylvania there are large masses of Germans, and for these there are almanacs, newspapers, public documents, Bibles, &c., printed in the German language. Still the English generally prevails.

NUMBER OF INHABITANTS.

25. The number of inhabitants has been given above under *extent*.

GOVERNMENT.

26. Congress makes laws for the government of the District of Columbia. There is nothing peculiar in the government of the states; they differ from each other only in minor details.

OCCUPATION.

27. *Agriculture* is the chief employment, and is conducted on a grand scale. Commerce employs thousands of people. More than a million are engaged in manufacturing; many thousands are employed in the mines and fisheries.

EDUCATION.

28. In nearly all of these states, first class advantages are afford-

ed for the education of youth. Academies, seminaries, colleges and universities are numerous. Among those best known are *Cornell University*, Ithaca; *Columbia College* and the *University*, in the city of New York; *Princeton College*, at Princeton; *Girard College* and the *University of Pennsylvania*, in Philadelphia; the *University of Maryland*, and *John Hopkins' University*, in Baltimore; and the *University of Virginia*, near Charlottesville.

RELIGION.

29. The usual religious organizations of our country prevail here: there are many Roman Catholics in Maryland.

CITIES.

30. The first in size and most important is *New York*; this, together with Brooklyn, Jersey City and other suburban places, which really make one city, has a population of 2,500,000, the second largest in the world.

Among the curious and interesting objects in this city we may mention *Broadway*, one of the finest streets in the world; the *Central Park*, of 300 acres, ornamented by the City Hall; a *splendid fountain*, belonging to the *Croton Aqueduct* which is 41 miles long, and supplies the city with excellent water; the *Battery*, which is a handsome promenade skirted by the bay; the *Exchange*, a noble edifice in Wall street.

Brooklyn contains the residences of many of the merchants of New York. *Albany* contains a very costly state-house. *Rochester* is noted for its flouring mills. *Buffalo* for an extensive lake trade. *Philadelphia* is the first city in the Union in the extent of her manufactures. *Baltimore* has surroundings surpassing those of any other city in the Union in variety and elegance; it is an important manufacturing city. *Washington*, the capital of the United States, contains many public buildings belonging to the government, some of which are of surpassing splendor. *Pittsburgh* is noted for its extensive manufactures of iron and glassware. *Richmond* is celebrated for its tobacco trade, and *Syracuse* for its salt.

Several towns of this section are celebrated for their historical interest. *Plattsburg* is noted for the two victories gained over the British in 1814. *Trenton*, for the capture of the Hessians by General Washington in 1776. *Gettysburg* was the scene of one of the most important battles of the late war, fought July 2d and 3d, 1863. Mount Vernon, on the Potomac, was the residence of George Washington, and contains his tomb.

The following is a list of the population of the leading cities:

CITIES.	POP. 1880.	CITIES.	POP. 1880.
NEW YORK.			
New York	1,206,000	Reading.	43,000
Brooklyn.	567,000	Erie.	28,000
Buffalo	155,000	Lancaster	26,000
Rochester	89,000	Wilkesbarre.	23,000
Albany.	91,600	Alltoona	20,000
Troy	57,000	DELAWARE.	
Syracuse	52,000	Wilmington.	42,000
Utica.	34,000	Dover	2,800
Auburn.	22,000	MARYLAND.	
Oswego.	21,000	Baltimore.	332,000
Elmira	21,000	Camberland.	11,000
Poughkeepsie	20,000	Frederick	9,000
NEW JERSEY.		Annapolis.	6,500
Newark	137,000	DISTRICT OF COLUMBIA.	
Jersey City	121,600	Washington.	147,000
Trenton	30,000	Georgetown	13,000
Patterson	51,000	VIRGINIA.	
Camden	42,000	Richmond	64,000
Hoboken	31,000	Norfolk.	22,000
Elizabeth	28,600	Petersburg	22,000
New Brunswick	17,000	Lynchburg	16,000
PENNSYLVANIA.		Alexandria	14,000
Philadelphia.	847,000	Portsmouth	11,000
Pittsburg	156,000	WEST VIRGINIA.	
Alleghany.	79,000	Wheeling.	31,000
Scranton	46,000	Parkersburg.	6,600
		Charleston.	4,200

HISTORY.

31. The Middle States were the chief theater of action during the Revolutionary war. New York was captured by the British in the autumn of 1776, and they did not leave it till November 25th, 1783. This city was the residence of the British commander-in-chief, and the center of all military operations throughout the country.

CONGRESS.

32. Philadelphia was also in the possession of the British from September 26th, 1777, till the 18th of June, 1778.

Congress assembled at Philadelphia till it was threatened by the British, in the summer of 1777. After the war, New York was for awhile the *seat of government*; and then Philadelphia, till it was removed to Washington, in 1800.

Washington occupied stations upon the Hudson, and in New Jersey and Pennsylvania, for several years; and his most celebrated displays of generalship took place in battles and skirmishes within the states of New York, New Jersey, and Pennsylvania.

STATES.	WHEN SETTLED.	BY WHOM SETTLED.	WHEN ADMITTED.
New York	1614	Dutch	1788
Pennsylvania*	1681	Wm. Penn	1787
New Jersey*	1620	Dutch	1787
Delaware*	1630	Sweedes and Finns	1787
Maryland	1634	English	1788
Virginia*	1607	English	1788
West Virginia.			1862

*Of the thirteen original colonies.

SOUTHERN STATES.

MP EXERCISES.

CAPIES.—Lookout, Hatteras, Fear, Romain, Sable, Romano, San Blas.

GULFS AND BAYS.—Winyah, Chatham, Charlotte Harbor, Tampa, Wacasa, Apalachee, Apalachicola, Santa Rosa, Pensacola, Mobile, Atchafalaya, Galveston, Matagorda, Laguna de la Madre, Vermillion, Barataria.

STRAITS AND SOUNDS.—Pamlico, Albermarle, St. Helena, Port Royal, Barnes, Mississippi, Florida Strait, Corpus Christi Pass, Hatteras Inlet, Isle au Brocton Sound.

ISLANDS.—Florida Keys, Marquesas, Dry Tortugas, Chaud-leur, Galveston, Padre.

MOUNTAIN RANGES.—Alleghany, Cumberland, Blue Ridge, Unaka, Smoky, Black.

MOUNTAIN PEAKS.—Grandfather, Caesar's Head, Black Dome, Sugar Loaf, Lookout.

PLAINS.—Atlantic Coast, Alligator Swamp, Okeefinokee, The Everglades.

LAKES.—Okeechobe, Kissimee, Pontchartrain, Borgne, Calcasieu, Sabine.

RIVERS.—Chowan, Roanoke, Pamlico, Neuse, Cape Fear, Great Pedee, Santee, Congaree, Wateree, Edisto, Savannah, Ogeechee, Altamaha, Oconee, Ocmulgee, St. Marys, St. Johns, Suwanee, Apalachicola, Flint, Chattahoochee, Choc-tahatchee, Escambia, Perdido, Mobile, Alabama, Tombigby, Pearl, Mississippi, Sabine, Atchafalaya, Calcasieu, Trinity, Brazos, Colorado, San Antonio, Nueces, Rio Grande, Red, Pecos, Arkansas, Canadian, White, Yazoo, Tennessee, Cumberland.

CITIES.—Raleigh, Wilmington, Weldon, Columbia, Charleston, Atlanta, Macon, Columbus, Montgomery, Mobile, Selma, Huntsville, Tallahassee, St. Marks, Pensacola, Key West, Jacksonville, Nashville, Knoxville, Memphis, Chattanooga, Jackson, Vicksburg, Natchez, New Orleans, Algiers, Baton Rouge, Donaldsonville, Alexandria, Natchitoches, Shreveport, Little Rock, Batesville, Napoleon, Helena, Camden, Austin, Galveston, Houston, Dallas, Indianola, San Antonio, New Braunfels, Talequah, St. Augustine.

RELATIVE POSITION.—In what direction is Atlanta from Austin? from Columbia? from Pensacola? from Nashville? from Little Rock? St. Augustine?

TRAVELS.—What state would you cross in going from Atlanta to Austin? to Little Rock? to Raleigh? Trace a water route from Savannah to Memphis; to Little Rock; to Austin; to Jackson.

MISCELLANEOUS.—What large towns have nearly the same latitude as New Orleans? When it is one o'clock at Raleigh, what is the time of the day at Austin? By means of the scale of miles, what is the distance from New Orleans to Austin? to Little Rock? to Nashville? To Atlanta?

What is the altitude of the sun to-day at noon, in St. Augustine?

DESCRIPTION.

POLITICAL DIVISIONS.

1. The southern states comprise North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Louisiana, Arkansas, Texas and the Indian Territory.

POSITION.

2. This section occupies the southern part of the United States. Kansas, Missouri. Kentucky and Virginia are on the northern boundary; the Atlantic washes the eastern shore and the Gulf of Mexico the southern; Mexico, and New Mexico are on the west; the latter also forms part of the boundary of Texas.

LATITUDE AND LONGITUDE.

3. These states lie between the parallels 25° and $36\frac{1}{2}^{\circ}$ north; and between the Meridians 76° and 107° west.

EXTENT.

4. The following exhibits the area of each state.

NAME.	GROSS.	WATER.	LAND.	NAME.	GROSS.	WATER.	LAND.
North Carolina	52,250	3,670	48,580	Mississippi....	46,810	470	46,340
South Carolina	30,570	400	40,170	Louisiana.....	48,720	3,300	45,420
Georgia.....	59,475	495	58,980	Arkansas.....	53,850	805	53,045
Florida.....	58,680	4,440	54,240	Texas.....	265,780	3,490	262,290
Alabama.....	52,250	710	51,540	Indian Ty.....	64,690	600	64,090
Tennessee.....	42,050	300	41,750	.....	.....	.....	.....

CHARACTERISTICS.

5. "Here in a sunny clime, 'mid breezes bland,
Bright flowers unfold, and luscious fruits expand.
No wintry blast to chill, the magnolia blows,
The sweet fig ripens, and the orange glows.
Mixed with the sand or deep in mountain veins,
The heedful miners golden ores obtain;
While richer stores prolific spring to birth,
Almost unbidden, from the teeming earth.
Cotton, tobacco, sugar, rice repay,
In this soft clime, the planter's culturing sway."

COAST.

6. Every part of the coast is low and flat. The capes of North Carolina, Hatteras, Lookont and Fear, are dangerous to navigators, being beset with shoals. The Peninsula of Florida may be considered as an immense cape. The delta of the Mississippi is a long projection forty miles in extent. On the Gulf Coast, shifting sand-bars hinder navigation.

BAYS AND SOUNDS.

7. These are numerous but generally shallow and little available for the purposes of navigation. Mobile is the most important bay in this part of the United States.

ISLANDS.

8. Galveston is the largest and most important: it is 30 miles long and 3 wide, and contains the populous city of Galveston, noted for its commerce.

The *Florida Keys*, south of Florida, is a large group of coral islands inhabited by a few fisherman and wreckers. Many of the islands along the Atlantic coast are low and sandy but some of them are very fertile and produce the famous sea-island cotton distinguished for its long silky fiber.

SURFACE.

9. The *Atlantic coast plain* attains here its greatest width, about 300 miles. The *tide water section* is flat; from this the surface rises until the mountains are reached. The *lowlands* are alluvial and have been formed by the conjoint action of the rivers and the ocean. Almost the whole state of Florida is a coral formation covered with a rich soil; this accounts for its flat surface. About two-thirds of Louisiana is of delta origin and no part is more than 100 feet above the sea level. There is a great diversity of surface in other parts of this section.

MOUNTAIN RANGES.

10. The southern portion of the *Appalachian* system extends, in various ranges, from Virginia, to Alabama, where it terminates. This system reaches its greatest elevation in North Carolina, in the Unaka Range.

MOUNTAIN PEAKS.

Snokey Dome	6,660	Grand Father's	5,897
Guyot	6,636	Stone Mountain	2,220
Buckley	6,600	Mitchell's	6,767
King's	1,650		

NATURAL CURIOSITIES.

11. These are many and of the highest order. Several isolated peaks afford magnificent views. Numerous cataracts exist in the mountains.

Stone Mountain in Georgia and *Lookout Mountain* in Tennessee are favorite resorts for tourists; the latter in addition to the grand and beautiful scenery is remarkable for a great battle fought here Nov. 24th 1863. *Table rock*, of South Carolina, presents on one side a perpendicular face of 1100 feet. *Cesar's Head* in the same vicinity is so called from its resemblance to a human cranium. In the north-western extremity of Georgia, in the Raccoon Mountains, is *Nicojeck Cave*. Its mouth is fifty feet high and eighty feet wide. It has been explored for several miles, without coming to the end. The floor is covered with a stream of cool limpid water through its whole extent, and the cavern is accessible only in a canoe. Three miles within is a cataract, beyond which voyagers have not penetrated. The roof is of solid limestone, smooth and flat, and the cave is remarkably uniform in size throughout.

Florida contains numerous springs of enormous size; some at their sources pour forth streams large enough to turn a mill. The *great spring*, 12 miles from Tallahassee, is over 1200 feet deep, and forms a beautiful lake of great transparency, reflecting all the colors of the sky; its waters are almost as cold as ice, even in the hottest weather.

Among the objects of interest to tourists, the *Hot Springs*, of Arkansas, about 60 miles south-west of Little Rock, stand prominent. There are about 100 of these with temperatures varying from 135° to 160°. A specially remarkable feature about them is, that there are springs of very cold water in such close juxtaposition that one can sit with one hand in a hot spring and with the other hand in a cold spring. The waters of these springs are said to have great curative properties and are visited annually by thousands of persons.

LAKES.

12. The lakes of Florida and Louisiana are numerous; those of the former are noted for their great transparency. The *Okeechobee*, in the south, is the largest. The lakes of Louisiana are shallow, and the term *lagoon* is a more appropriate designation of these bodies of water. In the north-western part of the state there is a series of lakes, formed in the valley of the Red River by the overflowing of that stream. When the water is high it sets back and fills these reservoirs, which are nearly drained again during the dry season.

LAKES.	LENGTH.	BREADTH.	AREA.
Okeechobee.....	40	25	800
Pontchartrain.....	40	25	800
Borgne	60	26	
Sabine	20	9	160
Calcasieu	20	5	90
Kissime.....	12		

RIVERS.

13. This entire region is well watered by noble rivers many of which afford many miles of navigation. In general they are navigable through the tide water section which is about 60 miles wide. The following table exhibits the length of the principal rivers, and the number of miles of navigation.

RIVERS.	LENGTH.	MILES OF NAVIGATION.
Chowan.....	75	
Roanoke.....	230	130, to Weldon.
Neuse.....	300	120, to Goldsborough.
Pamlico.....	220	100, to Tarborough.
Cape Fear.....	250	130, to Fayetteville.
Great Pedee.....		120, to Gardner's Bluff.
Santee.....	150	150.
Savannah.....	550	230, to Augusta and 130 miles farther by small boats.
Altamaha.....	150	150.
St. John.	350	250, to Enterprise and much farther by small boats.
Apalachicola.....	90	90.
Escambia.....		to the mouth of the Coneculla.
Mobile.....	45	45
Alabama.....	300	265, to Montgomery.
Tombigby.....	500	355, to Columbus.
Pearl.....	400	About 100 for small boats.
Tennessee.....	800	270, to Florence; above the shoals to Kingston.
Red.....	1600	350, to Shreveport.
Arkansas.....	1500	650, to Fort Smith.
Sabine.....	500	400, for small vessels.

SOIL.

14. Some of the richest soils in our country are in the southern states. In the mountain regions there is much poor soil, and in the western parts of Texas and the Indian territory are extensive tracts of barren, sandy soil.

CLIMATE.

15. Along the east the climate is hot and moist, and in some places unhealthy. In the elevated regions it is more temperate. The climate of Florida is decidedly tropical; even in winter the heat is oppressive. The temperature of the western states is cooler than that of the Atlantic states. The breezes from the Gulf Stream renders this portion some warmer in the same latitude.

VEGETATION.

16. Here nature exhibits great luxuriance and variety. Heavy forests of pine cover the lowlands, except in Florida. The yellow pine, producing tar, pitch, turpentine and valuable timber; the live oak, the gloomy cypress, the graceful palmetto, the aromatic bay tree, are indigenous to this region. Tobacco, rice, cotton, corn and sweet potatoes are the staples of agriculture. Oranges, lemons and figs are among the fruits. The sugar cane is raised extensively in southern Mississippi and in Louisiana. In Texas there are numerous ranches containing large herds of cattle.

MINERALS.

17. Gold is found in the mountain regions from Virginia to Alabama. Iron exists in all the States except in Florida, but nowhere so abundant as in Tennessee: it is said that thirty-five counties in this state contain iron. Coal and copper are wanting in Florida; in fact these states are almost without minerals; coal is obtained in the former, and large quantities of sulphur and salt in the latter. Arkansas is said to contain every known mineral. Tennessee is very rich in marble: 200 different varieties and shades are known.

MANUFACTURES.

18. These formerly were few, but are now becoming more common. Manufactures of all kinds are springing up all over the south. The leading articles of manufacture are tar, rosin, turpentine, cotton-seed oil, cotton goods, woolen goods, iron, ironware, flour, machinery, lumber, sugar, molasses, steamboats, etc.

COMMERCE.

19. The great commercial centers of the south are Wilmington, Charleston, Savannah, Mobile, New Orleans and Galveston. The exports are chiefly the great staples: cotton, sugar, rice, lumber and naval stores (tar, pitch, rosin and turpentine.) Texas also exports wheat, cattle, ponies, etc. The imports are manufactures from the northern states and from Europe, (northern fruits, wheat, ice, etc.)

NATURAL ADVANTAGES.

20. The pupil should be required to summarize these.

INTERNAL IMPROVEMENTS.

21. Railroads have not been built on a scale of such magnitude as in the northern states, because of a lack of capital and because her rivers have all along afforded cheap transportation; still there are many important lines. Georgia takes the lead in useful improvements of all kinds. Several canals have been dug, and the channels of some of her rivers have been improved. In many places the banks of the Mississippi are so low that huge dikes, called *levees*, have been built to keep the water in its channels. Sometimes these levees give way, when great destruction of property and even life ensues. The disasters of 1873 and 1882 are too fresh in our minds to need a recital. About 12,000,000 acres of swamp land is being drained in southern Florida; also, several canals of importance are being constructed.

ANIMALS.

22. Alligators are met with in the rivers; the rattlesnake and moccasin are common. Hummingbirds, paroquets, the turkey buzzard, (a species of small vulture), are among the peculiar animals. Deer, wild turkey, grouse and water-fowl abound in some parts.

INHABITANTS.

23. The population is chiefly of English descent, though it is mixed in some places. In Louisiana there are many descendants of the French, called *creoles*, and of the Spanish in Florida. The Indians, formerly numerous, are nearly all removed to the Indian Territory. The negroes, who form two fifths of the population, are a separate cast. They were brought to this country from Africa during the slave-holding period. It is said that Africa was depopulated of 40,000,000 of her inhabitants to supply the slave trade of America.

POPULATION.

24 The following contains the population of the Southern states:

STATES.	POP. 1870.	POP. 1880.	PER CENT. INCRS.	POP. TO SQ. M.
North Carolina	1, 671,000	1 490 000	50 ² / ₃	50
South Carolina	706,000	993,000	41 2-5	32 ¹ / ₂
Georgia	1,184,000	1,539,000	30	26
Florida	188,000	267,000	42	4 ¹ / ₂
Alabama	907,000	1,263,000	26 ¹ / ₂	24 ¹ / ₂
Mississippi	828,000	1,132,700	36 ² / ₃	28
Tennessee	1,259,000	1,542,000	22 ¹ / ₂	37
Louisiana	727,000	940,000	29 ¹ / ₃	21
Arkansas	484,000	803,000	65 ² / ₃	15
Texas	819,000	1,793,000	95	6
Indian Territory	68,000			

OCCUPATIONS.

25. Agriculture is the chief employment; the farms are generally large. There are few villages or towns and the people live in a scattered manner over the country. The inventions of the cotton gin, the spinning-jenny, and the power loom, have wrought a wonderful effect upon the industrial pursuits of the Southern states. One of these machines will do the work of several hundred hands.

LANGUAGE.

26. The English is the language of the inhabitants in general. In Louisiana the French is used to a considerable extent; many of the books, newspapers, and laws are printed in this language. There are some Spaniards in Florida who still speak the Spanish tongue.

GOVERNMENT.

27. There is nothing peculiar in the government of the states. Indian Territory has been set apart by Congress as a reservation for the Indians of our country. This was done in 1834, and already many tribes have been removed thither, among the chief are the Cherokees, Choctaws, Creeks, Chicasaws. Our government exercises no control over this territory except to preserve peace.

EDUCATION.

28. A number of good schools exist, and in some of the states liberal appropriations are made for educational purposes. However, the facilities are not equal to those of the northern and eastern states. The per cent. of illiteracy is greater than in any other part of the union.

RELIGION.

29. The people generally incline either to the Methodists or Baptists; the latter are more numerous here than elsewhere in the United States. According to the last census, the Baptists of the southern states numbered 1,024,000; the Methodists 1,229,000.

CHIEF CITIES.

30. *New Orleans*, stands on the left bank of the Mississippi river 100 miles from its mouth. From its form, as it lies on the bend of the river, it is sometimes called the *Crescent City*. The ground on which it is built is soft and marshy and there are no cellars to any of the buildings. Nothing can exceed the hurry and bustle of this city during the shipping season. Its wharves are constantly crowded by hundreds of steamboats. As a cotton market it ranks first in the world.

Mobile ranks third as a cotton market; it is compactly built and well drained. The public buildings are numerous.

Savannah, on one of the best harbors in the South, is regularly laid out with wide streets, and beautifully shaded with palmetto and other trees. Many of its dwellings are handsome specimens of architecture. It ranks second as a cotton market.

Charleston, at the junction of Cooper and Ashley rivers, has a deep and spacious harbor, and is the most commercial city of South Carolina. The harbor is defended by Fort Sumpter and Castle Pinckney. The street scenery resembles that of Savannah.

Wilmington has an extensive trade, both inland and foreign.

Nashville, the capital of Tennessee, is a handsome city and the educational centre of the South. It is the seat of three Universities, one college, and two female seminaries. The capitol, which stands on a commanding eminence 175 feet above the river, is a magnificent structure. This city is distinguished for its wealth, enterprising spirit, literary taste, and polished society.

Memphis has a fine situation on the Mississippi, and is a great cotton market. During the summers of 1880-81, it was sorely afflicted with the yellow fever scourge which caused the population to decrease largely.

POPULATION OF LEADING TOWNS AND CITIES.

CITIES.	POPULATION.	CITIES.	POPULATION.
SOUTH CAROLINA.		MISSISSIPPI.	
Wilmington.....	17,000	Vicksburg.....	12,000
Raleigh.....	9,000	Natchez.....	7,000
Charlotte.....	7,000	Jackson.....	5,000
New Berne.....	6,500	Meridian.....	4,000
Fayetteville.....	3,500	Columbus.....	4,000
Goldsborough.....	3,300	TENNESSEE.	
NORTH CAROLINA.		Nashville.....	43,000
Charleston.....	50,000	Memphis.....	34,000
Columbia.....	10,000	Chattanooga.....	13,000
Greenville.....	6,200	Knoxville.....	10,000
GEORGIA.		ARKANSAS.	
Atlanta.....	37,000	Little Rock.....	13,000
Savannah.....	31,000	Helena.....	3,600
Augusta.....	22,000	Pine Bluff.....	3,200
Macon.....	13,000	LOUISIANA.	
Columbus.....	10,000	New Orleans.....	216,000
Athens.....	6,000	Shreveport.....	8,000
FLORIDA.		Baton Rouge.....	7,000
Key West.....	10,000	Monroe.....	2,000
Jacksonville.....	8,000	TEXAS.	
Pensacola.....	7,000	Galveston.....	22,000
St. Augustine.....	2,300	San Antonio.....	21,000
ALABAMA.		Houston.....	17,000
Mobile.....	29,000	Austin.....	11,000
Montgomery.....	17,000	Dallas.....	10,000
Selma.....	7,500	Waco.....	7,300
Huntsville.....	5,000	Fort Worth.....	6,700

HISTORY.

North and *South Carolina* were originally embraced under the general term of Carolinas; they were separated in 1729.

Georgia was the last settled of the Atlantic States. The charter under which the colony was founded was granted in 1732 by George II., in honor of whom it received its name. The first settlement was made the following year at Savannah.

Florida was purchased of Spain in 1820, and at this time included the southern portions of Alabama and Mississippi. The first settlement was made at St. Augustine in 1565.

Louisiana with all the territory west of the Mississippi not claimed by Mexico, was purchased of France in the year 1803, by our government for a consideration of \$15,000,000; it has ever since been known as the "Louisiana Purchase."

Texas was originally a state of Mexico, but seceded in 1835, and in 1845 it was annexed to the United States.

THE NORTH-CENTRAL STATES.

MAP EXERCISES.

CAPES.—North, White Fish, Keweenaw.

GULFS AND BAYS.—Sandusky, Maumee, Saginaw, Green, Thunder, Fond du Lac, Keweenaw, Hammends, White Fish.

STRAITS.—Mackinaw.

ISLANDS.—Kelley's, Bass, Bois Blanc, Washington, St. Martin's, Fox, Beaver, Manitou, Apostle, Outer, Grand.

PENINSULAS.—North Michigan, South Michigan.

MOUNTAIN RANGES.—Ozark, Cumberland, Black Hills.

MOUNTAIN PEAKS.—Iron, Pilot Knob.

LAKES.—Superior, Michigan, Huron, Erie, St. Clair, Winnebago, Horicon, Koshkonong, Traverse, Big Stone, Devil, Houghton, Lake of the Woods, Red, Rainy, Sturgeon, Mille Lac, Leech, Cass, Winibigoshish.

RIVERS.—Mississippi, Ohio, Missouri, Illinois, Kaskaskia, Rock, Wisconsin, Black, Chipperwa, St. Croix, Menomonee, Portage, Fox, St. Marys, St. Clair, Detroit, Kalamazoo, Grand, Muskegon, Saginaw, Maumee, Wabash, White, Miami, Scioto, Hocking, Muskingum, Sandusky, Big Sandy, Kentucky, Green, Licking, Cumberland, Tennessee, Arkansas, Kansas, Platte,

Osage, Des Moines, Minnesota, Dakoto, Red River of the North, Niobrara, Big Sheyenne.

CITIES—Cincinnati, Columbus, Cleveland, Toledo, Dayton, Louisville, Covington, Newport, Indianapolis, Evansville, Peoria, Chicago, Springfield, Quincy, Fort Wayne, Madison, Milwaukee, Racine, La Crosse, Oshkosh, Detroit, Lansing, Grand Rapids, Saginaw, St. Louis, Jefferson City, Kansas City, St. Paul, Minneapolis, Des Moines, Keokuk, Dubuque, Burlington, Omaha, Yankton, Lincoln, Topeka, Leavenworth.

RELATIVE POSITION.—In what direction is Cincinnati from Louisville? from Columbus? Chicago? St. Louis? Frankfort? Indianapolis from Evansville? from Kansas City? Milwaukee? Toledo? Detroit? Springfield? Columbus? Yankton? Louisville?

TRAVELS—On what waters would you sail in going from Cincinnati to St. Paul? to Chicago? Yankton? Toledo? Columbus? In going from Detroit to Oshkosh? to Duluth? to Cleveland? to Fort Wayne?

MISCELLANEOUS.—Give the latitude of the capital of each state of this section. Give longitude of the same. Name ten cities on the Ohio River. Why should St. Louis become a large city? Why is Chicago large? What places have the same length of day as Columbus? What is the difference of time between Columbus and Indianapolis? St. Louis? Omaha? In which city does the sun set first to-day, Louisville or Grand Rapids? Covington or Toledo?

DESCRIPTION.

POLITICAL DIVISIONS.

1. This section of the Union comprises the states of Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, Kansas, Nebraska and Dakota Territory.

POSITION.

2. It is bounded on the north by British America and the lakes, and on the east, west and south by states and territories of the United States.

LATITUDE AND LONGITUDE.

3. It lies between the parallels 36° and 49° and between the meridians $80\frac{1}{4}^{\circ}$ and 104° west of Greenwich.

EXTENT.

STATES.	GROSS AREA.	WATER SURFACE.	LAND SURFACE.
Kentucky	40,400	400	40,000
Ohio	41,660	300	40,760
Indiana..	36,350	440	35,910
Illinois	56,650	650	56,000
Michigan .	58,915	1,485	57,430
Wisconsin.	56,440	1,590	54,450
Minnesota.	83,365	4,160	79,205
Iowa	56,025	570	55,475
Missouri.	66,415	680	65,735
Kansas	82,080	580	81,700
Nebraska	76,855	670	76,185
Dakota	149,100	1,400	147,800

5. Distances from Cincinnati.

TOWNS.	MILES.	TOWNS.	MILES.
Louisville.	137	Indianapolis	100
Milwaukee.	320	St. Paul	600
Chicago	270	Cleveland.	235
Nashville	250	Omaha	620
St. Louis.	300	Saginaw	300

CHARACTERISTICS.

6. The western states have been described as follows:

If thou wouldst find a favored land,
 By nature's chosen bounties blest.
 A fertile soil, a climate bland;
 Go seek the regions of the West.
 Here is the farmer's paradise.
 Rich harvests come with little care;
 While spreading rivers brimming rise,
 And to the marts these products bear.
 The grand Mississippi toils,
 For millions over its valley spread;
 And asks no share of countless spoils.
 Upon its burdened bosom sped.
 Majestic stream! thou rollest along.
 Type of the land thy waters love.
 With bosom broad and current strong.
 Oh who shall stay thy onward sway.

COAST.

7. This division of the United States has no sea coast, but its lake coast is extensive, the state of Michigan alone has above 1400 miles, because of which it is frequently called the Lake State.

GULFS AND BAYS.

8. The Great Lakes are well indented and many bays are formed; Saginaw, Green, Fond du Lac, Thunder, Sandusky, etc., are the principal.

The following gives the dimensions of some of the largest bays.

BAYS.	LENGTH.	BREADTH.	DEPTH.
Green	100	10 to 20	500.
Saginaw.	60	50	Deep enough for the largest vessels.
Maumee	7	10	
Sandusky	15	5	

ISLANDS.

9. The islands are generally small, but some, as those in Lake Erie, are important.

SURFACE.

10. The surface may be described as composed of vast level tracts, slightly broken in some places with low hills, and in others gently undulating, but rarely rugged or precipitous. The beds of the streams are often worn deep below the general elevation, giving their banks a hilly appearance, which, however, is wholly deceptive. The hilly sections embrace the southern parts of Ohio, Indiana, Illinois and Missouri, also large portions of Dakota and northern Michigan. The remainder is in general level or slightly rolling.

MOUNTAINS.

11. This region contains no mountain chains of extent, except the Cumberland on the eastern boundary of Kentucky, and the Ozark in Missouri; the latter may be regarded as a part of the Rocky Mountain System.

PLAINS AND VALLEYS.

12. The larger valleys have already been described. There are many smaller ones noted for their beauty and fertility. There are extensive prairies in Illinois, Iowa and some other places celebrated for their fertility.

NATURAL CURIOSITIES.

13. Some of the largest caves in the world are found in the Western States. *Mammoth Cave*, near Green River has been explored ten miles. About twenty rooms have been discovered, and here are found subterranean streams, waterfalls, and pits of unknown depth. Several of the rooms are of great extent, and have received appropriate names.

The *Haunted Chamber* is two miles long, twenty feet high, and ten wide, the roof being supported by beautiful pillars. One apartment is assigned to the evil spirit, where he has a *dining-hall, forging-shop, &c.* In one place, there is a considerable stream, in which there is a species of fish without eyes.

Epsom Salt cave of Indiana. In Indiana on the bank of the Big Blue River, a small stream falling into the Ohio, is the *Epsom Salt Cave*. This contains salt-petre, aluminous earth, and gypsum. About a mile and a half within the cave is a white column, thirty feet high, fluted from top to bottom, and surrounded by smaller columns of the same shape and appear-

ance. The floor of the cave is covered with Epsom salt, sometimes in lumps of ten pounds weight.

Pictured Rocks of Lake Superior. The south eastern shore of Lake Superior exhibits a singular phenomenon, called *Pictured Rocks*. They are a series of lofty bluffs and precipices, exhibiting the appearance of towering walls, ruins, caverns, waterfalls, &c., in every variety of combination. They extend twelve miles, and are generally about 300 feet in height, and often overhang the water. The color varies in shades of black, yellow, red, white and brown. The waves driven by the violent north winds, have worn the rocky shores into numerous caverns, bays and indentations, which increase the romantic effect of these appearances. In some places, these caverns receive the waters with a tremendous roar. In one place, a cascade tumbles from the top of the rock in so wide a curve, that boats pass between the sheet of water and the shore.

LAKES.

14. The Great Lakes which lie between the Western States and British America have been noticed. There are numerous small lakes in the three northern states. Many of them abound in fish, and upon their banks saw-mills are built.

RIVERS.

15. Perhaps no region in the world is so bountifully supplied with navigable streams. The *Missouri* and the *Mississippi* spread their hundred giant arms in every portion of its vast surface. All the navigable streams are the scenes of active trade, and are covered with steamboats and river craft.

NAME.	LENGTH.	AREA OF BASIN.	MILES OF NAVIGATION.
Mississippi.....	4,200	1,197,000	2,200, to St. Paul.
Missouri.....	2,900	518,000	2,606, to Ft. Benton.
Ohio.....	975	214,000	950, to Pittsburg.
Cumberland.....	600	17,000	200 to Nashville.
Tennessee.....	800	41,000	270, to Florence.
Kentucky.....	260		402, 40 miles above Frankfort.
Scioto.....	200		130 to Columbus.
Wabash.....	550	12,000	300,
Illinois.....	600		245,
Red River of the North	650	32,000	
Platte.....			

SOIL.

16. These states contain the most extensive tracts of fertile soil in the United States, and seemed destined to be the granary of millions of people. The northern peninsulas of Michigan, western Nebraska, and portions of Dakota are nearly sterile.

CLIMATE.

17. The cold is severe in the northern parts, and, in general, the temperature is lower than in the same parallels of latitude on the Atlantic coast. Bilious and intermittent fevers are among the most common diseases; in some parts there is considerable ague. Pulmonary complaints are rare, especially in the northern states of Minnesota and Wisconsin, where the air is very pure and the temperature remarkably even.

VEGETABLE PRODUCTS.

18. The largest deciduous tree of the American forest east of the Rocky Mountains is the occidental *plane-tree*, popularly known under the various names of *sycamore*, button-wood, and cotton-tree. It attains its greatest size in the western states, sometimes rising with a trunk from ten to fifteen feet in diameter, to the height of seventy feet before it begins to give out branches. The cotton wood, a species of poplar, which abounds on the western rivers, attains the height of eighty feet. It receives its name from its bearing a downy matter resembling cotton. The tulip-tree or white-wood, also called poplar; the black walnut, the butternut, the sugar-maple, pecan, various species of oak, etc., are common. The paw-paw is a shrub or small tree, which bears an oblong yellowish fruit resembling a cucumber, with a soft and edible, but insipid pulp. The locust-tree is a beautiful ornamental tree, and useful in the arts on account of the hardness and durability of the wood.

This section is the greatest agricultural region of the United States, producing immense quantities of wheat, corn, oats, barley, rye, potatoes, tobacco, orchard fruits, cattle, horses, sheep and hogs.

MINERALS.

19. Lead is very abundant in Missouri, Illinois, Iowa, and Wisconsin. Iron is mined chiefly in Ohio, Missouri and northern Michigan. The iron and copper of lake Superior are not only among the richest deposits of these metals, but rank with the best in the world. Perhaps, the largest deposit of iron in any one place, is found in Missouri, in Iron Mountains and Pilot Knob. It is said that the former contains iron sufficient to build a railroad thirty-three times around the world, and to supply it with all necessary rolling stock. Bituminous coal covers an area of many thousand square miles. Salt is obtained in many places but especially in Kentucky, Ohio, and Michigan. Petroleum exists in considerable

quantities in north-eastern Ohio. Building stones of all kinds are abundant.

MANUFACTURES.

20. These are extensive and flourishing in nearly all parts, and consist chiefly of agricultural implements, furniture, lumber, flour, pig-iron and iron castings, salt, wooden and willow wares, machinery, cars, etc.

COMMERCE.

21. This is almost wholly inland, but is very extensive and is carried on by means of canals, rivers, and the numerous railroads which intersect this section in every direction. The trade upon the lakes is large. The exports are mainly the products of the soil; the imports are goods from the eastern cities.

NATURAL ADVANTAGES.

22. The pupil should now be required to give the advantages from what he has learned: 1st for agriculture; 2nd for manufacturing; 3rd for commerce.

ANIMALS.

23. The wild animals indigenous to the country are no longer common. The brown bear, deer, elk, cougar, wild turkey, etc., are occasionally met with in the unsettled regions. The smaller animals, such as squirrels, rabbits, weasels, minks, badgers, ground-hogs, skunks, snakes, etc., are still to be found in nearly all parts. The domestic animals common in the older states, prevail here.

INTERNAL IMPROVEMENTS.

24. These are numerous and valuable. Many of the most important lines of railway lie wholly or largely within these states. Nearly every important town has railroad communications. Agriculture is carried on mainly by means of the most improved machinery, and is no longer a drudge work. The public roads are in general good, and travel is rendered easy and pleasant. Bridges and public buildings of great cost and elegance are scattered throughout this region.

INHABITANTS.

25. The inhabitants are descendants of almost every European country, and of every Atlantic state. There are separate communities of French, Welsh, Germans and Swiss, and there are many English, Scotch, and Irish citizens. Ohio and Indiana are peopled principally from New England, and Kentucky from Virginia and North Carolina. There are many negroes in Kentucky and Mis-

souri. Amidst a population so variously composed, and of so recent an origin, we can not expect to find many prevailing characteristics. The English language and American habits and manners, are, however, rapidly moulding all into one homogeneous mass.

26.

NUMBER OF INHABITANTS.

STATES.	POP. 1870.	POP. 1880.	WHITE.	COLORED.	POP SQ. M
Kentucky.....	1,321,000	1,649,000	1,377,000	271,000	41
Ohio.....	2,665,000	3,198,000	3,118,000	80,000	78
Indiana.....	1,939,000	1,978,000	1,939,000	39,000	55
Illinois.....	2,540,000	3,078,000	3,031,000	46,000	55
Michigan.....	1,118,000	1,637,000	1,615,000	15,000	28
Wisconsin.....	1,055,000	1,315,000	1,310,000	2,700	24
Minnesota.....	440,000	781,000	777,000	1,600	9 7-10
Iowa.....	1,194,000	1,623,000	1,615,000	10,000	30
Missouri.....	1,721,000	2,168,000	2,023,000	645,000	31
Kansas.....	364,000	996,000	952,000	43,000	12
Nebraska.....	123,000	582,000	450,000	2,000	6
Dakota.....	14,000	135,000	133,000	4,000	1

OCCUPATION.

27. Agriculture is the chief employment of the people, but manufacturing, mining and commerce engage many of the inhabitants. Ohio, Indiana, and Illinois rank among the first states of the Union in the value of their manufactures.

LANGUAGE.

28. The English is the dominant language everywhere. French is spoken in a few places in Wisconsin and Illinois; and the Swiss, Germans, and Welsh in many places retain their own language.

EDUCATION.

29. Excellent school systems have been inaugurated in all these states, and education is general among all classes. Many superior schools of an high order exist. The state schools are doing a grand work, and a common school education is within the reach of all.

RELIGION.

30. The usual religious denominations of the United States prevail here.

CITIES.

31. These are already numerous and many hold a respectable rank among the great cities of our country and the world. Chicago, on Lake Michigan, is the largest and most important. It

is the great centre of wheat, corn, and pork markets. Milwaukee, St. Louis, Louisville, Cincinnati, Detroit, and Cleveland are fine flourishing cities.

CITIES.	POPULATION.	CITIES.	POPULATION.
KENTUCKY.		Muskegon.	11,000
Louisville	121,000	<i>Lausling</i>	8,000
Covington.	30,000	WISCONSIN	
Newport	23,000	Milwaukee	116,000
Lexington	17,000	Racine.	16,000
Paducah	8,000	Oshkosh	16,000
<i>Frankfort.</i>	6,900	La Crosse	11,000
OHIO.		<i>Madison.</i>	10,000
Cincinnati	255,000	MINNESOTA.	
Cleveland	160,000	Minneapolis.	17,000
<i>Columbus</i>	52,000	<i>St. Paul.</i>	11,500
Toledo.	50,000	Winona	10,000
Dayton	39,000	Stillwater	9,000
Springfield	21,000	IOWA.	
Zanesville	18,000	<i>Des Moines</i>	22,700
Akron	16,500	Dubuque	22,000
Sandusky	16,000	Davenport	22,000
INDIANA.		Burlington	19,000
<i>Indianapolis</i>	75,000	Council Bluffs.	18,000
Evansville	29,000	Keokuk.	12,000
Ft. Wayne	27,000	Cedar Rapids.	10,000
Terra Haute	26,000	MISSOURI.	
New Albany	16,000	St. Louis.	351,000
La Fayette	15,000	Kansas City	56,000
South Bend	13,000	St. Joseph	32,500
Richmond.	13,000	Hannibal.	11,000
ILLINOIS.		Sedalia	10,000
Chicago	503,000	<i>Jefferson City</i>	5,000
Peoria	29,000	KANSAS.	
Quincy	27,000	Leavenworth	17,000
<i>Springfield</i>	20,000	<i>Topeka</i>	15,000
Bloomington	17,000	Atchison	15,000
Rockford	13,000	Lawrence	9,000
Aurora.	12,000	NEBRASKA.	
MICHIGAN.		Omaha	31,000
Detroit	116,000	<i>Lincoln</i>	13,000
Grand Rapids.	32,000	Nebraska City.	4,000
Bay City	21,000	DAKOTA.	
East Saginaw	19,000	<i>Yankton.</i>	2,000
Jackson	16,000	Deadwood.	4,000

ANTIQUITIES.

32. There are numerous remains of Antiquity in the Western States, which are supposed to have been the work of populous tribes who preceded the present race of Indians. These consist of mounds and inclosures of various forms. They are found at a number of places in Ohio, Illinois, and other parts. Very extensive works of this kind are also found in Mississippi. The mounds were formerly used as burial places, and the inclosures for military purposes.

HISTORY.

33. The first discovery within the Western States was made by De Soto and his party, in 1541, who went as far north as New Madrid, in Missouri. The first settlements were those of the

French, in the regions of the northern lakes and down the Mississippi. Kentucky was settled in 1770, and Ohio soon after.

WESTERN STATES AND TERRITORIES.

MAP EXERCISES.

CAPIES.—Mendocino, Conception, Foulweather, Arago, Blanco, Perpetua, Disappointment, Greenville, Flattery, Arena, Reyes.

GULFS AND BAYS.—San Francisco, Pablo, Suisan, Monterey, Shoal Water.

STRAITS AND SOUNDS.—Juan de Fuca, Puget Sound.

ISLANDS.—Santa Barbara.

MOUNTAIN RANGES.—Rocky, Cascade, Sierra Nevada, Coast, Bitter Root, Wind River, Wahsatch, Mogollon, San Bernardino, Blue, Humboldt, Salmon River, Black Hills, Sierra Madre, Little Rocky.

MOUNTAIN PEAKS.—Pike's Pk., Long's Pk., Fremont's Pk., Spanish Pks., Harvard, Yale, Lincoln, Uncampahgre, Wilson, Shasta, Tyndall, Whitney, Lyell, Ritter, Humphreys, Jefferson, Diamond, Three Sisters, Baker, St. Helens, Adams, Rainier, Hood, Olympus, Pitt.

PLAINS.—Great Interior Basin, Great Plains of the Columbia, Colorado, Llano Estacado or Staked Plain, Death Valley.

LAKES.—Great Salt, Utah, Yellow Stone, Shoshone, Tulare, Owens, Walker, Klamath, Pyramid, Carson, Goose, Silver, Harney, Chelan.

RIVERS.—Sacramento, San Joaquin, Colorado, Columbia, Missouri, Snake, Yellow Stone, Grand, Green, Gila, Little Colorado, Humboldt, Pecos, Canadian, Madison, Jefferson, Gallatin, South Platte, North Platte, Willamette, Owyhee, Milk.

CITIES.—*Sacramento*, San Francisco, Los Angeles, Oakland, San Diego, Stockton, Vallejo, Monterey, *Salem*, Portland, Umpqua, *Carson City*, Virginia City, *Olympia*, Seatlae, Steilacoom, *Boise City*, *Helena*, *Cheyenne*, *Denver*, Leadville, Golden City, Boulder, *Salt Lake City*, Brigham City, *Santa Fe*, Albuquerque, *Prescott*, Tucson.

RELATIVE POSITION.—In what direction is Washington Ty. from Nevada? from Montana? Utah from Wyoming? from Arizona? from Missouri? Salem from Prescott? from San Francisco? from Helena? from Denver?

TRAVELS.—What divisions would you cross in traveling by land from Olympia to Austin? to Denver? Sacramento? Cincinnati? Trace a water route from San Francisco to Olympia; to Peking; to Adelaide.

DESCRIPTION.

POSITION.

1. This section of the United States is bounded on the north by British America; on the east by Dakota, Nebraska, Kansas, Indian Territory, and Texas; on the south by Mexico and Pacific ocean; and on the west by the Pacific.

LATITUDE AND LONGITUDE.

2. It lies between 102° and 124° west longitude, and between 31° and 49° north latitude.

EXTENT, ETC.

3. The following table exhibits the area of each division, with population &c.

NAME.	AREA.	POP. '70	POP. '80	PER CENT. OF INCREASE.	POP. TO SQ. MILE.
*California	156,000	582,000	865,000	35	5 $\frac{1}{2}$
Oregon.	94,500	102,000	175,000	92+	2
Washington	67,000	37,000	75,000	213 $\frac{1}{2}$ +	1 $\frac{1}{2}$
Idaho	84,000	20,500	33,000	139—	2-5
Montana.	115,000	40,000	39,000	90—	1 $\frac{3}{4}$
Wyoming.	97,600	11,500	21,000	128—	2-9
Colorado.	104,000	47,000	194,000	388 $\frac{1}{2}$	17 $\frac{3}{8}$
Utah	82,000	99,000	141,000	66—	17-10
Nevada	110,000	58,700	62,000	16 $\frac{1}{2}$	14-25
Arizona	113,000	41,700	40,400	decrease, 2 $\frac{1}{2}$	1 $\frac{1}{2}$
New Mexico.	122,500	111,300	120,000	29—	1

*The actual land surface is given as the area.

COAST.

4. There are about 1,350 miles of sea-coast, of which California has 800, and Oregon 300. The coast is much less broken than that of the eastern shores of the United States, but there are several excellent harbors: the best is the Bay of San Francisco. Oregon is rock-bound, and what few harbors she has are shallow and obstructed by sand-bars. Puget Sound furnishes some very fine shipping advantages.

CAPES.

5. Some of the capes are high and rocky, and some have light-houses.

INLETS.

6. San Francisco, the principal, is 70 miles long and 35 wide. Its entrance, called the "Golden Gate," is between a gap in the mountains, which come down in bold precipices to the shore. It is divided by straits and projecting points into three parts, the northern being called *San Pablo* and *Suisun Bays*. Golden Gate is about two miles wide. Puget sound penetrates Washington far inland and is divided into several divisions. The shores of these inlets are remarkably bold and large ships are able to ride close up to them and load and unload without the intervention of wharves. Admiralty inlet connects Juan de Fuca with Puget Sound.

ISLANDS.

7. The only islands worthy of note are the Santa Barbara. They are 8 in number and imperfectly known. Many sea-birds are said to inhabit them.

GENERAL CHARACTERISTICS OF THE SURFACE.

8. This section may be comprised in three divisions. The Coast Region, the Plateau Region, and the Rocky Mountain Region. The Plateau states include Utah, Nevada, Arizona, and Idaho. The physical features are exceedingly varied. It is remarkable for its great mountains, and extensive plains. We find here boundless wastes and fertile valleys, lofty peaks lifting their summits far above the regions of eternal snows and yawning caverns with stupendous walls of rock on either side.

MOUNTAIN RANGES.

9. The Rocky is the chief range. In it are many passes, some of which are several miles wide and of such easy grade that railroads can be built without difficulty. The best known are South, Union; Poncho, Laramie, and Bridgers passes. The Cascade range derived its name from the numerous cascades in it in the region of the Columbia River. Sierra Nevada meaning "snow-clad range" is well known for its picturesque scenery. The Coast range lies near the coast and is of less elevation than the others described. A number of minor ranges traverse this section in different directions.

MOUNTAIN PEAKS.

10. The following is a list of the principal peaks with their heights.

CASCADE RANGE.

Baker	10,500.
Rainier	14,444.
Olympus	8,138.
Hood	11,200.
Diamond	9,420.
Pitt.	11,000.
Jefferson	10,200.
Three Sisters	9,420.

SIERRA NEVADA RANGE.

Shasta	14,140.
Whitney	15,000.
Lyell	13,217.
Tyndall	14,386.
Dana	13,227.
St. Helens	9,550.

ROCKY MOUNTAINS.

Pikes.	14,147.
Longs.	14,271.
Fremonts	13,700.
Harvard.	14,383.
Yale	14,000.
Uncampahgre	14,235.
Lincoln.	14,297.
Spanish.	11,000.

AREAS OF PLATEAUS.

Colorado.	sq. mi. 60,000.
Great Interior Basin.	210,000.
Great Plains of Columbia	20,000.
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PARKS.

11. The mountains of Colorado enclose a series of remarkable valleys, called "parks." Most of them are small, but some of the larger measure 50 miles across. The best known are North, South, Middle, and San Louis Parks.

NATURAL CURIOSITIES.

12. Much of the grandest natural scenery in the world is to be seen in this portion of the United States. From the summit of *Pike's Peak*, the observer has a radius of 200 miles, containing some of the finest scenery the eye of mortal has ever beheld. The Great Canon of the Colorado has been described elsewhere.

The *Yosemite Falls* on the Merced River of California, is perhaps, the most remarkable cataract known. In 3 perpendicular leaps the water falls a distance of 2,550 feet, the highest is over 1,300 feet.

But nowhere in the world are so many objects of interest crowded into so small a space as the *National Park*. It abounds in mountains and valleys interspersed with beautiful lakes, deep canons and lofty cataracts, thundering geysers and peaceful rivers, lakes of mud and limpid waters, petrified forests, mineral springs, lovely parks hemmed in on all sides by mammoth walls of rock; in short, almost everything that one could imagine of the

grand and sublime in nature. The Park occupies the north-west corner of Wyoming with small portions of Idaho and Montana, and was set apart by the United States Congress as a National Park or pleasure ground. It is 65 miles long, 55 wide and has an area of 3,575 square miles.

Throughout this vast area are many other objects of great interest to the lover of nature, but which we have not time or space to describe.

LAKES.

13. These are numerous but not large. *Great Salt Lake*, the best known, is too shallow to afford extensive navigation. The western shore consists of level plains of deep soft mud, traversed by rills of salt and sulphur-water. These plains are destitute of vegetation, except small shrubs, which are covered with particles of salt shining in the sun; curious optical illusions are here presented, arising from *mirage*, which distorts objects in a most grotesque manner.

The water contains about 20% salt, and is so heavy that a man cannot sink in it. In one place is a field of solid salt, incrusting upon the mud, so as to bear up mules, like ice. *Lake Tulare* is a fine body of water in the southern part of California, covering an area of 500 square miles. Other lakes are *Mono*, *Klamath*, *Goose*, *Harney*, etc. Some of the lakes are celebrated for their beauty.

RIVERS.

14. There are several long rivers, but few of them furnish much navigation. The *Columbia* abounds in numerous cataracts. The *Colorado* with its deep Canons is not adapted to afford commercial facilities.

The following are the chief rivers:

NAME.	LENGTH.	AREA OF BASIN	MILES OF NAVIGATION.
Columbia.....	1,400	338,000	with interruption 725
Sacramento.....	350		250
San Joaquin.....	400		120
Missouri.....	2,996	518,000	2,600
Snake.....	1,050		160
Yellow Stone.....	1,100		300
Gila.....	650		
Grand.....	350		
Colorado.....	1,050	223,000	500
Rio Grande.....	1,800	240,000	500

SOIL.

15. The soil, in general, is not fertile. Nearly all the *Plateau Region* is sterile, except some of the river valleys. Good crops, however, may be obtained in many places by irrigation.

The *San Joaquin* valley is one of the finest and most productive regions in the world. The *Ilano Estacado* lies partly in

this section and is an almost treeless region but contains some fine pasturage upon which wild cattle and the bison feed. This plain covers an area of over 40,000 square miles, and is said to have been named from the stakes which were placed there by the Santa Fe traders, as land marks to guide them on their way to the Gulf.

In a region so extensive we may naturally expect a great diversity of physical aspects, but here there seems to be unusual irregularity. It embraces the ruggedest mountain peaks in the United States, their tops covered with perpetual snow, looking down upon deserts scorched by the summer sun: volcanic fires bursting from cones of *eternal ice*; valleys of unbounded fertility, and large spaces of desolate rock, sand, or gravel: mighty rivers of fresh water finding their way to the sea: salt *lakes imprisoned* between rocky, barren, and impassable wastes; with ridges of *everlasting sterility*, yet sparkling with profusion of choice minerals.

CLIMATE.

16. The *Plateau Region* has a dry climate. The western mountain ranges intercept the moisture laden winds from passing over them and distributing the rains over the sun-parched region.

On the *Pacific Coast* it is much warmer than in corresponding latitudes in the eastern states, owing to the warm ocean current. The climate of the *interior* is dry and pure, and is thought to be beneficial to those troubled with pulmonary complaints. The *days* here become very hot while during the night it often freezes. *Arizona* contains the hottest climate in the United States. In the extreme north the cold of the winter is severe.

AGRICULTURAL PRODUCTIONS.

17. In the cultivated regions, there are wheat, corn, barley, hops, pea-nuts, grapes, fruits, &c. In the southern parts melons of superior quality are raised. *Oregon* and *Washington* are important grazing countries. These extensive plains, while they are not suitable for tillage, are excellent pasture lands. Wheat and fruits also are important crops. California is especially noted for her superior fruits of all kinds, and for her extensive vineyards.

In most places, however, the people are chiefly engaged in the mines.

Owing to the lack of moisture, the *regions of the interior* can never become great agricultural states.

MINERALS.

18. These are of great variety and of the highest importance. *California* is the first in the Union in the production of gold and *Colorado* in silver. Iron, lead, copper and tin are found in places. Coal exists in Colorado, California, Oregon, and Washington. Gold has been the object of the miner; other minerals have been very much neglected, so that we are still ignorant as to the amount and extent of the mineral wealth of this region.

19. The following table exhibits the report of the gold and silver yields according to the last census.

STATES.	GOLD.	SILVER.	TOTAL.
California	\$17,151,000	\$ 1,151,000	\$18,302,000
Oregon	1,098,000	28,000	1,126,000
Washington	136,000	1,000	137,000
Idaho.....	1,480,000	465,000	1,945,000
Montana	1,806,000	2,905,000	4,711,000
Wyoming	17,000		17,000
Colorado.....	2,700,000	15,549,000	19,249,000
Utah.....	292,000	4,743,000	5,035,000
Nevada.....	4,888,000	12,431,000	17,319,000
Arizona	212,000	2,326,000	2,538,000
New Mexico.....	49,000	392,000	441,000

MANUFACTURES.

20. The manufactures of this section are yet comparatively unimportant. Those of California are the most valuable. They embrace flour, lumber, woolens. California blankets are noted for their fineness and durability. Wines, brandies, cigars, tobacco, and metallic wares are also manufactured to a considerable extent.

COMMERCE.

21. Several lines of ocean steamers run between San Francisco and other parts of the world. Extensive trade is carried on over the Pacific railways.

The *leading exports* are wheat, barley, corn, fruit, raisins, wines, brandies, gold, silver. The *imports* are teas from China and Japan, coffee and spices from the East Indies, and manufactures from the eastern states.

NATURAL ADVANTAGES.

22. The pupil should be required to give these, following preceding models.

INTERNAL IMPROVEMENTS.

23. The *Union Pacific Railroad* is the longest railway line in the world. Numerous other roads are being built in the different states and territories. *Steamboats* ply the navigable waters. Cities are springing up like magic, and the whole territory is rapidly filling up with an industrious population.

ANIMALS.

24. The grizzly bear, the puma, or California lion, mountain sheep, deer, foxes, wolf, birds of many kinds, fish &c. are the principal wild animals.

INHABITANTS.

25. These consist mainly of *immigrants* from the eastern states and from Europe. There are about 100,000 *Chinese*, of which three-fourths are in California, and one-tenth in Oregon. *Indians* are still numerous, but many of them have become either wholly or partially civilized.

OCCUPATION.

26. The absorbing occupation is that of mining. The gold is dug with rockers, pickaxes, hoes, spades, iron bars, etc. Steam-engines are at work, rivers are turned from their beds, and mountains perforated through their bowels. The dust is obtained by washing or sifting the sand.

In many places powerful machines are used for crushing gold-bearing quartz rock.

The *fertile valleys of California*, and those of other places, have turned many away from the mines to farming which is very profitable. So rapidly have the *agricultural interests* developed that California is the first state in the Union in the production of grapes, barley, and among the first in that of wheat, corn, and fruits; the latter are among the finest in the world. Of late years *silk-culture* has received considerable attention. Stock-farming is largely carried on.

LANGUAGE.

27. Here as elsewhere in the United States, the *English Language* prevails. There are many foreigners who speak the language of the country from which they have immigrated. In New Mexico and Arizona the *Spanish* is spoken to some extent.

GOVERNMENT.

28. Four divisions of this section are states—California, Oregon, Nevada, and Colorado; the rest are territories. There is nothing especially peculiar respecting their government worthy of mention.

EDUCATION.

29. Liberal provisions are made for public instruction in these states. Owing to the sparseness of the population in many places, there is great difficulty in providing schools. In the *public*

schools of California, male and female teachers every-where receive the same pay. Here as well as in Orgeon are numerous colleges and universities. The *State Normal School* of California is at San Jose.

RELIGION.

30. The same churches which are found in the older states exist here. In Utah are many *Mormons*, a religious sect who practice polygamy.

CITIES.

31. *San Francisco*, the largest and most important city, is situated on one of the best and most convenient harbors in the world.

It stands on a plain about a half mile wide, inclining toward the bay, with swelling hills behind it. It presents one of the most remarkable examples of rapid growth ever recorded. In 1847 it had 450 inhabitants, while in 1880, thirty-three years afterward, it numbered 234,000 souls. The temperature which is 56 deg. average, varies but little. Not less than 5,000 vessels frequent its landings every year, and its commerce extends to all quarters of the globe.

Sacramento, the capital, on the Sacramento river, has fine advantages for trade which have contributed mainly to its growth. It is a very prosperous city, well laid out with many fine gardens.

Los Angeles, "the city of angels," so called because of its pleasant climate, the beauty of its gardens, and the excellence of its fruits. It is the most populous city in southern California and is in the midst of extensive vineyards. *Oakland* and *Vallejo*, both on good harbors are fine cities.

Denver, the capital of Colorado, is noted for its rapid growth. In 1870 the population was 4,749; in 1880, 35,629. It commands a fine view of snow-capped mountains, is well built and already contains an immense wealth.

Salt Lake City was laid out in 1847 by Brigham Young. It has an elevation of over 4,000 feet and is inhabited chiefly by Mormons.

CITIES.	POPULATION.	CITIES.	POPULATION.
San Francisco.	234,000	Carson City.	4,200
Oakland.	35,000	Olympia.	12,000
Los Angeles.	11,000	Salem.	2,500
Vallejo.	9,000	Boise.	1,900
Sacramento.	21,000	Salt Lake City.	21,000
Jan Jose.	13,000	Helena.	3,600
Prescott.	1,800	Denver.	36,000
Santa Fe.	6,600	Cheyenne.	3,500
Stockton.	10,000	Leadville.	15,000
Virginia City.	11,000	Portland.	18,000

HISTORY.

New Mexico, Arizona, Nevada, California, Utah, and the greater part of Colorado, belonged to the territory acquired from Mexico in the Mexican war of 1846—8. This whole region was then called California. The rest of this section of the United States formed a part of the "Louisiana Purchase." In May 1792, Captain Robert Gray, in the ship *Columbia*, of Boston, discovered and entered the *Columbia River*, giving it the name of his vessel. In 1804—5 Lewis and Clarke, under the direction of our government, explored the country from the mouth to the source of the *Columbia*. From 1808, the country was occupied by one or more of our fur companies. On these and other grounds, the United States claimed the territory up to the latitude of 54 deg. 40 min. As the British traders had settled in the territory, the *British government* set up a rival claim, which caused a serious and threatening dispute. This was happily adjusted by treaty, in 1846, making the line of 49 deg. our northern boundary. In 1853 the territory was divided.

This following table will be found useful.

NAME.	ORGANIZED AS TERRITORY.	ADMITTED AS A STATE.
California.....		1850
Oregon.....	1848	1858
Washington.....	1853	
Nevada.....	1861	1764
Idaho.....	1863	
Montana.....	1864	
Wyoming.....	1868	
Colorado.....	1861	1867
Utah.....	1850	
Arizona.....	1863	
New Mexico.....	1850	

ALASKA.

MAP EXERCISES.

Locate the following:

CAPIES.—Prince of Wales, Barrow, Lisburne, Hope.

BAYS AND SOUNDS.—Bristol, Norton, Kotzebue, Dixon, Cook's Inlet.

ISLANDS.—Aleutian, St. Lawrence, Kadiak, Baranoff, Nuniyak, Prince of Wales, Unalaska.

PENINSULAS.—Alaska, Kenai.

MOUNTAINS.—Alaskan, Yukon, Ramanoff, St. Elias, Fairweather, Crillon, Wrangel.

RIVERS.—Yukon, Porcupine, Kuskokwim, Copper.

TOWNS.—Sitka, St. Paul, Captain's Harbor.

MISCELLANEOUS.—What is the direction of Sitka from Behring's

Strait? New York? London? What is the time of day at Sitka when it is 1 P. M. at Columbus, O? Give latitude and longitude of Alaska? A traveler to Sitka finds his watch has gained $2\frac{1}{2}$ hours. What meridian did he start from?

DESCRIPTION.

LOCATION.

1. Alaska (great country) is a large peninsula in the north-west corner of North America, washed by the Arctic and Pacific Oceans and their branches.

EXTENT.

2. It extends from 130° to 168° west longitude and from 54° to $71\frac{1}{2}^{\circ}$ north latitude. The area including the islands is about 580,000 square miles.

COAST.

3. As much of the coast as is washed by the Arctic Ocean and Behring's Sea is for the most part low and swampy, or abounding in shoals and sand-bars, and contains few harbors: the remaining coast line is mountainous with deep soundings. Cape Prince of Wales is a rocky and precipitous promontory, and point Barrow is a low sand bar extending into the Arctic. The coast line, without the indentions, measures 4,000 miles.

ISLANDS.

4. South of St. Elias is the Alexander Archipelago consisting of 1,100 islands. Of the Aleutian, Unimak is the largest, and Unalaska is of the most commercial importance. Nearly all the islands of this group are volcanic.

SURFACE.

5. The interior of Alaska has been only partially explored, but so far as known it is mainly a hilly plateau, with several important mountain ranges; the *Alaskan range* is the principal chain. Sixty one volcanoes are said to exist in Alaska and on the islands, of which ten are active. In the valley of the Yukon are large fertile plains and extensive marshes. The country is gradually rising.

MOUNTAIN PEAKS.

6. Mount St. Elias is regarded by some as the highest land in North America, its height being variously estimated from 16,000

to 19,500 feet. Mt. Fairweather has an altitude of about 15,000 feet; some authors say 19,500 feet. Mt. Crillon is a little lower. The Aleutian islands may be regarded as a continuation of the Alaskan range, but partly submerged.

RIVERS.

7. The principal river is the *Yukon*, 1,800 miles long, and navigable during the summer for about three-fourths its length; it is over a mile broad 600 miles above the delta. Several other streams, as the *Copper*, *Porcupine*, etc., exist; however, little of importance is known of them.

Lakes in the interior are said to be numerous.

SOIL.

8. Owing to the severity of the climate, the soil is mostly sterile. Kadiak Island and several of the Aleutian Islands contain the best soil where oats, barley, and root crops may be raised. The valley of the Yukon contains much fertile land and excellent pasturage during the summer. A luxuriant vegetation is found in many places, when beneath the surface there is a layer of ice which never melts.

CLIMATE.

9. The climate is remarkable for its mildness, considering the high latitude. In the southern parts thick ice is not formed, and while the *winters* are *foggy* and *dreary*, the *summers* are *sunny*, *dry* and *pleasant*. Great quantities of rain fall along the coast. Sitka is said to be the *rainiest place* outside of the tropics, there being from 60 to 90 inches of rain, and from 225 to 285 rainy days each year. The warm climate of Alaska is referable to the warm ocean current.

PRODUCTIONS.

10. Heavy forests of pine, birch and poplars cover large areas. Cattle are raised with success; cranberries are exported, and the rivers as well as the sea are full of valuable fish. It is said that the waves and floods cast enormous quantities of fish ashore, in heaps sometimes three or four feet high. The agricultural resources can never furnish much more than what is necessary for home consumption.

MINERALS.

11. Alaska seems to be rich in minerals. Coal, iron, copper, lead, petroleum, amber, garnets, gold, silver, etc., have been found, and some of these—as iron, coal, gold,—in large quantities. Sulphur is believed to be very plentiful.

ANIMALS.

12. The bear is the largest native animal. Others are the fox, beaver, otter, deer, lynx, muskrat, martin, mink, and canvas duck. The fur-seal is the chief source of revenue. Whales and other marine animals, peculiar to northern waters, are common.

OBJECTS OF INTEREST.

13. Hot and mineral springs are abundant near Sitka, on the Aleutian Islands, and in other parts. The *fossil remains* are peculiarly interesting; these show that Alaska was once the home of the elephant, the horse, and the buffalo. Fossil ivory is obtained. The *vegetation* during the summer resembles that of the tropics in richness and luxuriance.

INHABITANTS.

14. The native races are partly Esquimaux and partly red Indians with some intermixtures. The Whites, numbering about 400, are chiefly Russians and natives of the United States. Total population, 31,000.

EDUCATION.

15. There are no schools, save those established by a few missionaries. The natives are nearly all Pagans and but little has yet been done to civilize them.

GOVERNMENT.

16. Alaska is an unorganized territory of the United States and as yet, little subject to governmental control.

TOWNS.

17. Sitka is the capital on Baranoff Island. Its inhabitants (500) are principally engaged in catching and curing salmon. There are also several saw mills, a school house and a church. St. Paul, on the Kadiak Island, is surrounded by the finest farming land in the whole territory. It is the main depot of the seal fisheries. *Captain's Harbor*, on Unalaska Island, has a good anchorage. Besides these several *trading posts* exist at various places. The *natives* in some places live in large apartments *under the ground*; sometimes 150 live together in such a place; these are *filthy* but preserve the inmates effectually from the weather.

HISTORY.

18. Alaska was formerly called Russian America. In 1728 Behring's Strait was discovered by *Vitus Behring*, and fully ex-

plored in 1788 by *Captain Cook*. In 1741 *Tchirikoff* discovered the American coast, and upon this the Russians founded their claim to the country. In 1804, Sitka (New Archangel) was founded. In 1825 the limits of the territory were defined by treaty between Great Britain and Russia. In 1867 it came into the possession of the United States: \$7,200,000 being paid for it by our government.

DANISH AMERICA.

MAP EXERCISES.

LOCATE THE FOLLOWING CAPES.—Farewell, Dan, Brewster, Bismark, North.

Where is Disco island? What island on the north-eastern shore?

In what direction from Greenland is Iceland? What waters on the western coast of Greenland? What separates it from Iceland? Between what parallels of latitude do these Islands lie? What is the capital? Name and locate the towns of Greenland. What noted volcano on Iceland? What is the nature of the surface of Greenland? Of Iceland? What isotherm crosses Iceland? What ocean currents in proximity?

DESCRIPTION.

POSITION.

1. Danish America is situated in the north-eastern part of North America and is composed of the two islands Greenland and Iceland.

EXTENT.

2. The greatest length of Iceland is 300 miles, and the breadth 200. Area about 40,000 square miles. Greenland has an area of 760,000 square miles.

COAST.

3. The eastern coast is almost inaccessible on account of the drifting ice brought down by the Arctic currents. The western coast is generally rocky and high, but in some places descends to low valleys. The coast of Iceland is very irregular except on the south-east where it is almost unbroken.

The water of the numerous bays is, in general, deep and furnishes many fine harbors. But navigation is rendered dangerous by the rocky islets with which the coast abounds.

BAYS, ETC.

4. Baffin's bay is a large sea between Greenland and Prince William's Land. It was discovered by Baffin, an English Navigator, A. D. 1616. It can be navigated only for a short time in summer, on account of the ice. Its shores are mountainous. The water is the resort of seals and whales.

ISLANDS.

5. Thousands of small islands surround the larger, but they are frozen and unimportant. Fisheries are carried on on some of them during the summer.

SURFACE.

6. The surface of both islands is high, rocky, and sterile. The elevated portions are covered with eternal snow and immense glaciers stretch toward the sea, where the overhanging masses frequently break off and form prodigious icebergs.

VOLCANOES.

7. Of these there are many on Iceland. The mountains take the general name of *Fokull*. The highest is *Oerafa*, 6,409 feet high. *Snafell*, 5,965. *Hecla*, the noted volcano, is 5,110 feet in elevation. There are 30 known volcanoes, several of which are active, and destructive earthquakes are not uncommon.

NATURAL CURIOSITIES.

8. The most remarkable of these is the *Great Geyser* which throws up jets of boiling water to a height of 90 to 100 feet with a noise like thunder. The cause of this wonderful phenomenon is supposed to be the Volcano Hecla, to whose fires the water finds access and being converted into steam produces the great display of power.

Nowhere in the world is the *Aurora Borealis* seen in such magnificent splendor as in this portion of the globe. It is often so bright as to cause the stars to disappear, and mirage is common on the coast.

LAKES AND RIVERS.

9. The immense reservoirs of ice and snow furnish abundant supply to the many lakes and rivers of Iceland. But the former

are, in general, small, and the latter are far more remarkable for their number than for their length. A few have a length of from 100 to 150 miles. Very few streams exist in Greenland.

SOIL.

10. This is, in general, sterile, but in many places would be capable of producing good crops were it not for the severity of the climate.

CLIMATE.

11. The climate is variable; storms of great violence frequently occur. It sometimes lightens, but there is no thunder. The long winters are occasionally interrupted by thaws which last for weeks at a time. The isotherms show an average temperature from 32° to 14° Fah. During the summer, the sun remains above the horizon so long that the climate becomes warm and pleasant, and mosquitoes abound.

VEGETABLE PRODUCTIONS.

12. Mosses, lichens, grasses, and shrubs grow even in the far north and furnish food for the reindeer, muskox, and bear. In the southern portions of Greenland, the pine, elder and birch attain a height of 5 to 6 feet. Potatoes can be grown in the south. Forests formerly abounded in Iceland, but the island is now destitute of trees. The want of fuel is severely felt; the Gulf stream and the Polar Currents bring considerable drift-wood to their shores, and fine *white turf* is used. The soil is full of roots. Beautiful varieties of flowers are found. Oats and garden vegetables are produced in limited quantities.

MINERALS.

13. Iceland contains fewer minerals than Greenland. Sulphur is the only important product. Rock-crystals are common. Basaltic caves occur, some of them, it is said, might well be compared to Fingall's cave.

On Disco Island, good coal is mined in abundance and at various places on Greenland are found silver, copper, iron, tin, lead, plumbago, zinc, arsenic, and other metals. The slates contain impressions of extinct *tropical vegetation*.

ANIMALS.

14. The principal wild animals are the white bear, which is large and strong, and when pinched by hunger will come to the cabins and attack the settlers. Reindeer whose flesh and milk supply the inhabitants with food, and dogs which are servicable for drawing sledges, are numerous. Horses, cattle, sheep, and pigs

are raised by the Icelandic farmers. Sea-fowl are plenty along the coast and the seas swarm with fish. No reptiles exist on the land. The whale and seal-fisheries are particularly valuable.

MANUFACTURES.

15. There are few manufactures and these consist of the simplest articles of home consumption.

COMMERCE.

16. This is quite limited and consists in the exchange of butter, wool, furs, skins, fish, oil, sulphur, and Iceland mosses, for the few articles of necessity imported mainly from Denmark.

NATURAL ADVANTAGES.

17. The pupil should be required to give the natural advantages of Danish America.

INTERNAL IMPROVEMENTS.

18. There is nothing like a *public road* anywhere to be seen. There are a few *stone houses*, but in many places the people live in houses built from bricks made of snow. The rigor of the climate is a *great barrier* to the development of internal improvements.

INHABITANTS.

19. The inhabitants are of Scandinavian origin, and speak a language resembling the old Norse. They are strongly attached to their country and are hospitable to strangers. There are about 250 white inhabitants in Greenland, mostly missionaries, and about 10,000 Esquimaux. The population of Iceland is 71,300.

OCCUPATION.

20. Some of the people are engaged in tilling the soil, but the rearing of live-stock, hunting and fishing are the principal occupations.

EDUCATION.

21. The intellectual capacity of the Icelanders is of a superior order. Domestic education is general, though schools are few. There is *one college*, Iceland College, with eight professors. Nearly all the valuable works of European literature have been translated into their tongue and some of the natives have distinguished themselves for their literary attainments.

RELIGION.

22. "Almost all the inhabitants are *Lutherans*, the whole is-

land forming a bishopric." The people are remarkable for their piety and devotion; great crimes are unknown among them. No war has existed for 900 years. Honesty is a prevailing principle.

Attempts have been made to civilize the Esquimaux of Greenland, but when left to themselves have invariably relapsed into barbarism.

GOVERNMENT.

23. Danish America is subject to Denmark nominally. In 1879 its *independence* was literally acknowledged. The constitution is modelled after that of Denmark. Greenland is yet to a certain extent controlled by trading companies managed by the Danish crown.

TOWNS.

24. *Reykjavik*, which signifies steam-town, so called from the numerous geysers and boiling springs in the vicinity, is the capital. It is situated on the southern coast and has about 1,400 inhabitants. It has a college, library, and an observatory.

Upernavik is situated on the north-western coast of Greenland and is the most northern town in the world. *Godhavn* (Good Harbor) *Gothaab* and *New Heruhut*, are the principal places on the western shores.

HISTORY.

25. Iceland was discovered about 860 by a Norwegian pirate, and permanently settled in 874. An independent republic soon arose in Iceland, which afforded an asylum to literature and the arts, then on the point of being overwhelmed by the general tide of barbarism on the continent of Europe. The Icelanders were skillful and hardy navigators. They discovered Greenland about the year 981; Eric Raude, the discoverer, was driven by accident upon the coast.

A still more remarkable discovery, made by them, was *Vineland*, or New England, which we have already noticed. In the year 1261 the Icelanders submitted to Haco, king of Norway, and remained attached to this kingdom. In the year 1380, the island was transferred to the crown of Denmark. Greenland came under the Danish government in 1023. At the beginning of the fifteenth century there were 200 towns and villages, mostly on the east coast, but the whole colony, in a mysterious manner, suddenly disappeared. Captain Davis, an Englishman, discovered Greenland in 1586. No inhabitants were found, except the Esquimaux, but the ruins of houses and churches were numerous. In 1721 it was again settled.

BRITISH AMERICA.

MAP EXERCISES.

Locate the following:

CAVES.—Barrow, Chidley, Charles, Bauld, Ray, Race, Gaspe, Canso, Bieton, North, Hurd, Churchill, Henrietta, Maria, Whittle.

GULFS AND BAYS.—Hudson, James, St. Lawrence, Fundy, Chaleur, Mirimichi, White, Trinity, Placentia, Notre Dame, St. George, Georgian, Mosquito, Georgia, Boothia, Baffin, Coronation, Penny, Ungava, Chesterfield Inlet.

CHANNELS, STRAITS, AND SOUNDS.—Canadian, Fox, Belle Isle, Northumberland, Canso, Queen Charlotte, Dixon, Juan de Fuca, Hudson, Bras D'or, Melville, Lancaster, Jones, Smith, Davis.

ISLANDS.—Newfoundland, Prince Edward, Anticosti, Cape Breton, Miquelon, Langley, St. Pierre, Charleton, Great Manitoulin, St. Joseph, Southampton, Baffin Land, Luke, Fox, Banks, North Devon, Vancouver, Queen Charlotte, Thousand.

PLAINS, PLATEAUS.—Arctic Plateau, Arctic Plain, Height of Land.

MOUNTAIN RANGES.—Rocky, Coast, Selkirk, Wotchish, The Long Range, Jameson.

MOUNTAIN PEAKS.—Brown, Hooker, Lyell, Murchison, Head, Nelson, Logan, Murray.

PENINSULAS.—Nova Scotia, Labrador, Melville.

LAKES.—Superior, Huron, Erie, Ontario, St. Clair, Gr. Slave, Gr. Bear, Athabasca, Deer, Winnipeg, Winnipegosis, Manitoba, of the Woods, St. John, Simcoe, St. Peter, Grand, Nipissing.

RIVERS.—St. Lawrence, Ottawa, Maurice, Saguenay, Sorrel, St. John, St. Croix, Miramichi, St. Francis, East Maine, Abittibbe, Albany, Nelson, Severn, Winnipeg, Red River of the North, Saskatchewan, Athabasca, Peace, Slave, Mackenzie, Frazer, Churchill, Rupert.

CITIES.—Ottawa, Montreal, Toronto, Hamilton, Three Rivers, Kingston, St. John's, St. John, Halifax, Hearts Content, Sydney, St. Andrews, Dalhousie, Chatham, Charlotte Town, Port Sarnia, Winnipeg, New Westminster, Victoria.

RELATIVE POSITION.—In what direction is Quebec from Montreal? from Halifax? St. John? Ottawa? New York? Boston?

TRAVELS.—What provinces would you cross in traveling by land from Winnipeg to Halifax? New Westminster? Chesterfield Inlet? Cape Charles? Trace a water route from Ottawa, to Halifax; to St. John's; to Toronto; to Port Sarnia; to New York; to Ft. Wayne; to Glasgow. From Lake Traverse to Big Stone Lake.

MISCELLANEOUS.—What provinces of British America are crossed by 45° north Latitude? by 48° ? by 50° ? What provinces are crossed by the meridian of Washington? by 5° east of Washington? 5° west? What places have the same time of day as Columbus, O.? Boston? What places have the same length of day as Paris? As Belgrade? As St. Petersburg? Where is a man's shadow longest at noon on the last day of May? On what day does a man make the longest shadow at noon in Montreal? In what direction is Iceland from the North Pole? Do all cities on the meridian which passes through Quebec have sunrise at the same time? If not, where does the sun rise first?

DESCRIPTION.

POSITION.

1. British America is bounded on the north by the Arctic Ocean, on the east by the Atlantic, Davis Strait, and Baffin's Bay, on the south by the United States, and on the west by the Pacific and Alaska. In latitude it extends from the 42° to 72° north; in longitude from 55° to 141° west longitude from Greenwich.

EXTENT.

2. The greatest length is 3,000 miles, and greatest breadth is 2,000 miles. Area, 3,862,000 square miles.

PROVINCES.	AREA.	POPULATION.	CAPITALS.
Ontario.	108,000	1,913,000	Toronto.
Quebec	193,000	1,358,000	Quebec.
Nova Scotia	22,000	441,000	Halifax.
New Brunswick	27,000	321,000	St. John.
Prince Edwards Island.	2,100	108,000	Charlotte Town.
Manitoba.	14,000	50,000	Winnipeg.
British Columbia	376,000	60,000	Victoria.
Territories	2,650,000	100,000	
Dominion of Canada	3,372,000	4,351,000	Ottawa.
Newfoundland	40,000	147,000	St. John's.
Labrador.	450,000	7,000	
British America	3,862,000	4,665,000	

DISTANCES.

From Montreal to Winnipeg,	-	-	-	-	-	1140 miles.
" " " Halifax,	-	-	-	-	-	460 "
" " " Washington,	-	-	-	-	-	520 "
" " " James Bay,	-	-	-	-	-	450 "
" " " St. John's,	-	-	-	-	-	1000 "

GENERAL OUTLINE OF COAST.

3. The coasts are very irregular and are well set with deep bays and commodous harbors, some of which are among the finest known. The *Coast of Labrador* is rugged and uninviting. Of the northern coast we know but little that is reliable.

CAPES.

4. Cape Rice contains a light-house 180 feet above the level of the sea. There are many other capes but none of particular note.

GULFS AND BAYS.

5. The following is a list of the principal gulfs and bays:

NAME.	LENGTH.	BRE'DTH.	AREA.	DEPTH.
St. Lawrence	280	280	80,000	
Hudson.	850	600	400,000	900
James	300	175	50,000	
Baffin's	850	400		6,500
Georgia	110	50		
Ungava.	180	100		
Fundy.....	170	30 to 50	7,000	

The last named gulf is noted for its *high tide* which sometimes rises to a height of 71 feet, and rushes in with such velocity that swine are often *overtaken* and *drowned* while feeding on shell fish.

SEAS.

6. The Lincoln and Polar seas lie to the north of British America. It has been thought by some that an "open polar sea" exists in the far north, where the water never freezes.

CHANNELS AND STRAITS.

7. The following is a list of the principal channels and straits:

NAME.	LENGTH.	BREADTH.
Belle Isle	48	12
Northumberland	100	25 to 40
Canso.....	17	2½
Canadian		30
Hudson.	400	60 to 150
Davis.		200

The first named straits are dangerous for navigation.

SOUNDS.

8. Queen Charlotte Sound is between Vancouver Island and the mainland; Melville Sound is a branch of the Arctic.

ISLANDS.

9. The following is a list of the islands:

NAME.	LENGTH.	BRE'DTH.	AREA.	POPULATION.
Anticosti	120	30	3,850	But few inhabitants.
Cape Breton.	100	85	3,120	76,000
Prince Edward.	130	4 to 30	2,120	108,000
Newfoundland	419	300	40,000	147,000
Isle of Jesus	23	6	85	10,000
Vancouver.	278	30 to 65	16,000	6,000

Thousand Isles.—They are about 1,500 in number, situated at the lower end of Lake Ontario.

Southampton.—Coasts are rugged and mountainous, and the interior is unexplored.

Queen Charlotte.—Climate is agreeable and contains deposits of gold, copper, iron, and coal.

The Langley, Miquelon, and St. Pierre lie south of Newfoundland and belong to France; they are important fishing stations.

PENINSULAS.

10. Nova Scotia is 350 miles long and 120 miles wide. Melville is a frozen peninsula within the Arctic circle; it is 250 miles long and 100 miles wide. Labrador is a large peninsular tract of land and politically attached to Newfoundland.

GREAT BANK.

11. The *Great Bank* lies to the south-east of Newfoundland and is covered with water varying in depth from 100 to 600 feet. It forms a part of the so called *Telegraphic Plateau* extending across the ocean to Ireland. This is the largest and most profitable fishing ground in the world and during the fishing season—from June till November—many thousands of people find employment here. Both cod fish and seals are taken in large numbers. Huge *icebergs* brought hither by the Arctic currents sometimes lodge here. The length of the *Great* or *Grand Bank* is about 600 miles; breadth, 200.

SURFACE.

12. The middle of this extensive region consists of an extensive plain; in the north is the Arctic Plateau with an elevation of 1,500 feet. The western part is traversed by the Rocky and Coast Mountains. Upper Canada is characterized by a general evenness

of surface. The surface of New Brunswick and Nova Scotia is generally undulating. Prince Edward Island is extremely picturesque, but destitute of those bold features recognized in the neighboring provinces. Without any absolute flat surface, the country has no mountains, and in general the land rises into gentle undulations. Newfoundland is rocky and much intersected by rivers and lakes.

MOUNTAIN RANGES.

13. The Height of Land which separates the Hudson Bay system from the Lake system, terminates in the east in the Watchish Mountains.

The *Notre Dame Mountains* trend nearly east and west and are found in Quebec south of the St. Lawrence. There are numerous smaller ranges in various parts. The *Rocky* and *Coast* mountains have been described elsewhere.

MOUNTAIN PEAKS.

14. The following is a list of the principal peaks:

NAME.	HEIGHT.	NAME.	HEIGHT.
Brown.....	16,000.	Murchison.....	15,700.
Hooker.....	15,750.	Lyell.....	13,200.

NATURAL CURIOSITIES.

15. Quebec is characterized for its romantic and picturesque scenery. The physical features of this province, on both sides of the St. Lawrence, are varied and grand, consisting of boundless forests, magnificent rivers and lakes, foaming cataracts, and islands with rich pastures.

The picturesque falls and natural steps of the *Montmorenci* in the vicinity of Quebec are widely known. The height of the former is 250 feet. The *Ottawa and its tributaries* abound in falls and rapids; the highest, called the Rideau, falls over a perpendicular rock 50 feet high.

The "*Boiling Pot*" or the Chaudiere Falls, in the same vicinity, are wild and grand. "The fall in no place exceeds 40 feet, but the rapids extend 6 miles, and the water foams, tosses, and tumbles among the rocks of every shape, in perpetual variety, and in such a manner as never to weary the eye, appearing like a multitude of different streams struggling for a passage."

The *Falls of the Chaudiere* on the south side of the St. Lawrence, 10 miles below Quebec, leap with a perpendicular pitch of 125 feet down a wild chasm. The beautiful Falls of the St. Anne, and the Thousand Isles are favorite places with tourists.

But the *grandest river scenery* occurs in the last 60 miles of the Saguenay River; the banks varying in height from 500 to 1,500 feet, are not only perpendicular but often actually overhang the waters below, as if to look down upon its own grandeur. The water is, in some places, more than 3,000 feet deep.

LAKES.

16. The lakes of Canada are exceedingly numerous, dotting the whole country with numerous sheets of water of various dimensions and interwoven with many connecting streams. They contain many valuable kinds of fishes and add much to the natural beauty of the country. Some of them are noted for the *transparency* of their waters; those of Great Bear Lake are so clear that a white object can be seen at a depth of 90 feet. Lakes Superior and Huron are remarkable for their transparency; rocks and fish can be seen at extraordinary depths. Lake Winnipeg is muddy and shallow.

The following is a list of some of the large lakes wholly within British America:

NAME.	LENGTH.	BREADTH.	AREA.	HEIGHT.
Winnipeg	210	5	9,000	628
Great Bear.	150	150	14,000	230
Great Slave	300	50	11,800	
Athabasca	230	14	3,200	600
Simcoe	50	18	500	970
St. Peter	37	10	250	
Nipissing.	50	37	600	

RIVERS.

17. The rivers of British America are abundant. But, even in the southern parts, they are frozen over for five months or more each year, so that their commercial value is not great. During the winter season boats are made to run on the ice.

NAME.	LENGTH.	AREA OF BASIN.	REMARKS.
St. Lawrence	1,800	298,000	1,800 miles of navigation.
Mackenzie	2,120	112,000	Explored by Alexander Mackenzie in 1789-92.
Athabasca	1,000		Lignitic coal is abundant along its coast.
Peace	1,100		Navigable 900 miles.
Nelson	350		Navigation almost impossible owing to rapids.
Saskatchewan.	1,650	360,000	Not generally navigable. Land falls.
Ottawa	700	80,000	Navigable 250 miles.
Saguenay	100		Navigable to Ha Ha, 60 miles.
Albany	320	52,000	
Maurice	400		High banks and many falls.
Severn	350		
St. John	450	27,000	Navigable 225 miles.
Slave	300		It has two mouths.
Churchill	850	74,000	Contains many rapids.

SOIL.

18. Owing to the severity of the climate the great portion of British America is unproductive. Those parts bordering on the United States are in general quite fertile and capable of produc-

ing excellent crops of wheat, oats, barley, rye, potatoes, etc.

Quebec has a thin soil, and Labrador is almost sterile. New Brunswick and Nova Scotia contain much good land, especially in the river valleys.

Prince Edward Island is noted for its fertility, and for its mild climate. Newfoundland contains many districts called "barrens," occupying the summits of hills and elevated tracts, covered with a scanty vegetation; but in the neighborhood of rivers and lakes there are valuable soils yielding profitable returns to the husbandman. According to Johnston the valley of the Grand river affords excellent accommodations for a hundred thousand settlers.

Nearly every hill contains a lake on its summit.

CLIMATE.

19. The climate of British America is severe and much colder than that of Europe on the same parallels. It is nearly the same with the climates of Norway, Sweden, Russia, and the south part of Iceland. The summers are short and hot, and the winters excessively cold. Those parts bordering on the lakes and seas, have a much more equable temperature.

VEGETATION.

20. The southern portion is thickly wooded with pine, ash, maple, butternut, walnut, cherry, bass, sycamore, button-wood, alder, willow, cedar, tamarack, etc. Of shrubs, there are many kinds, among which is the sumack. Flowery plants of great beauty abound, and among the wild fruits are cherries, plums, grapes, currents, goose-berries, raspberries, cranberries, strawberries, etc. Nuts of various kinds are abundant. Nearly all vegetables and fruits of the temperate climate thrive, under proper cultivation. Manitoba is noted for its wheat. Corn will not ripen except in the extreme southern parts.

MINERALS.

21. Iron is abundant, and lead, tin, and copper occur in several places. The latter abounds most on Lake Superior. *Silver* is known to exist and *gold* is found in limited quantities on the Chaudiere River, but it exists extensively in British Columbia.

New Brunswick, Nova Scotia, and Vancouver Island are rich in coal. Marble of many beautiful varieties, lithographic stones, gypsum are found extensively in Ontario; the last named mineral is plenty in New Brunswick and Nova Scotia. A peculiar stone or rock from which grindstones are made, is largely quarried in the latter provinces.

MANUFACTURES.

22. The manufactures of Canada are not very extensive. They embrace agricultural implements, carriages, clothing, cordage, boots and shoes, spirits, sewing machines, machinery, woollens, oil-cake, maple sugar, ships, lumber.

NATURAL ADVANTAGES.

23. The pupil should be required to give the natural advantages: 1st, for agriculture; 2d, for manufactures; 3d, for commerce.

COMMERCE.

24. This is important and embraces a great variety of articles. The *exports* for 1880 were \$92,000,000, and consisted chiefly of minerals, fish, lumber, cattle, horses, furs, agricultural products, carriages, boots and shoes, clothing, cordage, etc. The *imports* for the same year amounted to \$86,500,000, and were of the following classes:—Wearing apparel, cottons, woollen, worsteds, hardware, coffee, tea, sugar, railway iron, cars, locomotives, and machinery.

INTERNAL IMPROVEMENTS.

25. There are numerous railroads traversing all the settled portions. The two principal are the *Great Western* and the *Grand Trunk*; the latter is 1,092 miles long, and includes the Victoria Iron *Tubular Bridge* at Montreal, nearly two miles long. The Suspension Bridge over the Niagara on the Great Western is a remarkable structure. The *Welland Canal* connecting lakes Erie and Ontario, is 28 miles long, and cost \$7,638,000. Our government assisted in building this canal. Several other canals exist along the St. Lawrence. Steamboats are numerous and many excellent public buildings exist in different parts.

ANIMALS.

26. Wild animals, as bears, deer, wolves, boars, beavers, and otters are numerous, and furs form an important product. The humming bird appears in Canada, and the rattle-snake is not uncommon. Fish are abundant in lakes, rivers, and borders of the sea.

INHABITANTS.

27. The Indian Aborigines are now nearly extinct and occupy the out-posts of the territory. The present dominant population is of European origin. There are many of French descent, or as they are locally called *habitans*. Irish are numerous in Newfoundland, and in the neighboring provinces. Settlements of

Norwegians, Swedes, Welsh, Germans, Swiss, Dutch, and Russians exist in various places. About 22,000 Negroes and 100,000 Indians are scattered over this immense territory.

OCCUPATIONS.

28. Agriculture is a leading pursuit. Canada, from the first has been a commercial country. Ship building is carried on extensively. Fishing employs thousands of men. Lumbering, mining, manufacturing gives employment to many more.

LANGUAGES.

29. The prevailing language is every where the English, but in the country parts of Quebec a corruption of the French is used.

GOVERNMENT.

30. The government of Canada is modeled after that of the United States, with some modifications. The Dominion of Canada embraces all the provinces except Newfoundland. The chief executive is called Governor General and is appointed by the Crown of England. Marquis of Lorne, husband of Louise, daughter of Queen Victoria, is the Presiding Officer at present.

The *legislative power* is exercised by two houses of parliament, the senate and the house of commons. The senate is the upper house and its members are appointed by the Governor General. The members of the lower house are elected by the people. The government of each province is patterned after that of the general government.

The *chief executive*, styled the Attorney General, is appointed by the Governor General and holds his office during pleasure, but cannot be removed from office within five years except for cause.

EDUCATION.

31. Throughout Canada the facilities for education are excellent. Numerous colleges and schools of an higher order exist. King's College at Toronto, Albert University in Belleville, Queen's University in Kingston, Ottawa College in Ottawa, The McGill College at Montreal, and the Marrin College of Quebec are some of the principal schools.

RELIGION.

32. There are many Roman Catholics in Quebec, Newfoundland and Nova Scotia. The following statement will show the religious standing pretty accurately:

Roman Catholics.....	1,500,000.	Presbyterian.....	550,000.
Church of England.....	500,000.	Methodists.....	575,000.

There are besides a few Mormons and Mohammedans.

CITIES.

33. *Ottawa*, the capital, is beautifully situated on the right bank of the Ottawa river.

The parliament buildings and suspension bridge are the chief attractions. It contains manufactures of flour, cast iron, agricultural implements, mill machinery, brooms, wooden ware, etc.

Quebec has an extremely picturesque situation on the St. Lawrence river.

It is also noted for its strong fortress, because of which it is styled the Gibraltar of America. There are many fine buildings and the educational institutions are celebrated. The streets are narrow and crooked. The commerce and manufactures are extensive; of the latter the most important are hats and shoes, paper, leather, musical instruments, nails, cutlery, machinery, ships, etc.

Montreal is the largest city in the Dominion and is an immense entrepot of trade.

It has excellent river and railroad advantages. The manufactures are numerous and of almost endless variety. The cathedral of Notre Dame has a capacity of 10,000 to 12,000 persons; its largest bell weighs 29,400 pounds. There are many other large and imposing churches.

Toronto, the capital of Ontario, is one of the most flourishing cities in the Dominion.

It is beautifully situated on a circular bay on the northern shore of Lake Ontario. The University of Toronto is the best in British America; there are several other noted schools. Trading, pork packing and manufacturing are leading pursuits.

Halifax is situated on one of the finest harbors in the world and is the stopping place for vessels between the United States and northern Great Britain.

There are manufactures of all kinds of iron castings and machinery, agricultural implements, nails, fuse, pails, gunpowder, cordage, boots and shoes, soap, candles, leather, wooden ware, distilleries, etc.

St. John, the chief city of New Brunswick, is picturesquely situated on a river of its own name.

The city is regularly laid out and well built and is the entrepot of an immense foreign and inland trade. It contains a break water constructed to intercept the violence of the waves occasioned by southerly gales. Commerce, fishing and manufacturing are the leading industries.

St. Johns, the capital of Newfoundland, is an important fishing station. Its harbor is one of the very best. The population fluctuates greatly with the fishing seasons.

The following list gives the names of the principal cities of the Dominion with population according to the last census—1881:

NAME.	POPULATION.	NAME.	POPULATION.
Ottawa.....	27,000.	Charlottetown.....	9,000.
Montreal.....	141,000.	Kingston.....	14,000.
Quebec.....	62,000.	Hamilton.....	36,000.
Toronto.....	86,000.	Three Rivers.....	9,000.
Halifax.....	36,000.	Winnipeg.....	3,000.
St. John.....	26,000.	Victoria.....	6,000.
St. Johns.....	22,500.	London.....	20,000.
Fredericton.....	6,000.		

HISTORY.

34. Canada was discovered by Sebastian Cabot in 1497; but the first settlement made by Europeans was in 1544 at St. Croix harbor, by Jaques Cartier a French navigator, who sailed up the St. Lawrence. In 1608 a permanent settlement was made upon the present site of Québec, Canada being then called New France. From this period, till 1759, the French continued to occupy the country; but in that year an English army under General Wolf captured Quebec and by September, 1760, all other places within the government were surrendered to the British. In 1774 a legislative council was appointed to assist the Governor. Seventeen years later, Canada was divided into two separate provinces, called *Upper and Lower*, with distinct legislatures. In 1840 a re-union was effected, and at still later periods the organization of the government has been beneficially modified. The present Union was effected in 1867. In 1663, one of the most *remarkable earth-quakes* on record occurred in Canada, in which the whole face of the country was said to have been changed. Rivers were dried up, lakes disappeared, mountains sank and lakes occupied their places; the color of the water in the rivers became changed and the St. Lawrence took a new course, in places; at Three Rivers two mountains were thrown into the St. Lawrence.

MEXICO AND CENTRAL AMERICA.

MAP EXERCISES.

Locate the following:—

CAPES.—San Lucas, San Eugenia, Corrientes, Catoche. Gracias a Dios, Mariato, Lazaro.

GULFS AND BAYS.—Mexico, Campeachy, Honduras, Chiriqui Dulce, Nicoya, Fonseca, Tehuantepec, California, Sebastian.

SEAS.—Caribbean.

CHANNELS AND STRAITS.—Yucatan.

ISLANDS.—Tres Marias, Revilla Gigedo, Angel, Bay Is., Coiba, Cozumel.

PENINSULAS.—Yucatan, Lower California.

MOUNTAIN RANGES.—Sierra Madre, Sra de la Gigantea.

MOUNTAIN PEAKS.—Popocatepetl, Iztaccihuatl, Cofre de Perote, Orizaba, Toluca, Jorullo, Colima, San Salvador, Coseguina, Amilpas, Concahguia, Chiriqui, Orosi, De Agua, De Fuego.

RIVERS.—Rio Grande, De Santiago, De las Balzas, Verde, Saucedo, San Pedros, Yaqui, Sonora, Santander, Tamesi, Coaxacoalcos, Tabasco, Usumasinta, Alvarado, Wanks, Ulloa, San Juan.

LAKES.—Nicaragua, Managua, Terminos, Chapala, Cayman, Guzman.

ISTHUSES.—Tehuantepec, Panama.

PLATEAUS.—Anahuac, Bolson de Mapimi.

MISCELLANEOUS.—What is the latitude of Mexico? Cape San Lucas? Cape Cotoche? San Jose? What is the longitude of the same places? What is the difference of time between Washington City and Mexico? Which has the longer day on the 1st day of January? Which to-day? What cities of the United States have the same time of day as Acapulco. What places near the tropic of Cancer? What is the distance on an air line from Washington to Mexico? from Mexico to Cape San Lucas? to New Orleans? to Cape Cotoche? to Lake Nicaragua?

RELATIVE POSITION.—In what direction is Cape San Lucas from Mexico? Vera Cruz from Mexico? Matamoras? Guanajuato? Acapulco? Comayagua? On what water would you sail in going from Acapulco to Guaymas? to San Francisco? From Vera Cruz to New Orleans? to Yankton? to Indianapolis? to Nashville? to Augusta? to Toronto?

DESCRIPTION.

POSITION.

1. These interesting countries lie south of the United States and form the southern part of North America. They are washed on the west by the Pacific, on the east by the Gulf of Mexico and the Caribbean sea. The Isthmus of Panama connects Central America with South America.

LATITUDE AND LONGITUDE.

2. In latitude they extend from 8° to 22° north and lie between the 82nd and 117th meridians west of Greenwich.

EXTENT.

3. Mexico measures 1,925 miles in length and from 130 to 1,500 in breadth. Central America, 1,000 miles in length and from 80 to 300 in breadth. The area of the former is 742,000 square miles; of the latter 175,000, square miles.

COAST.

4. The Gulf coast contains few harbors and these are obstructed by sand-bars. In the bay of Honduras, the navigation is rendered dangerous by numerous reefs and keys. On the west coast from Acapulco to Guaymas is a series of fine harbors. Several deep inlets exist on the west coast of Central America. Most of the rivers are obstructed at their mouths, and both coasts are rendered almost inaccessible for several months by violent tempests.

CAPES.

5. These are few as the coast line presents few irregularities. Cape San Lucas projecting from the southern point of Lower California; Catoche, from Yucatan; Gracias a Dios, from Central America, are among the more prominent points.

GULFS AND BAYS.

6. Gulf of California is 700 miles long, and from 30 to 150 miles broad. It contains numerous islands and valuable pearl fisheries along its rugged shores. The Gulf of Mexico with its branch bay of Campeachy are on the east of Mexico. Dulce, Nicoya, and Fonseca indent the western shore of Central America.

CHANNELS.

7. Yucatan Channel lies between Yucatan and Cuba and is 120 miles across.

ISLANDS.

8. The islands are all small and of not much note. The following are the principal: Cozumel, 24 miles long and 7 wide; Revilla Gigedo west of Mexico, and uninhabited; and the Bay Islands in the Gulf of Honduras.

PENINSULAS.

9. Lower California is 750 miles long and from 30 to 150 wide. Area 62,000. There is much poor soil, and the climate is hot

though tempered in places by the sea breezes. Yucatan peninsula contains 30,000 square miles. It is very productive but destitute of any important rivers.

SURFACE.

10. This portion of America consists of a country rising in successive terraces or table lands to an elevation of 8,000 or 10,000 feet, on the top of which are placed the snow-capped peaks of the Cordilleras. The eastern coasts are low.

MOUNTAIN RANGES.

11. Several ranges cross Mexico lengthwise, but the chief range is the Sierra Madre, "Mother Range," a continuation of the Rocky Mountains, which extend the whole length of both countries, and with only a slight interruption in the Isthmus of Panama reappear in South America under the name of the Andes. They are not so high in Central America as in Mexico.

MOUNTAIN PEAKS.

12. Many of the peaks are volcanic and of great height. These with their snow-capped summits present a grand appearance. Popocatepetl (the hill that smokes) and Iztaccihuatl (the white lady) constitute the "twin peaks." The top of the latter resembles a woman with a sheet spread over her and the Mexicans have a superstition that she is the *wife of Montezuma*, the sovereign of Mexico at the time of the conquest by Cortez.

The following list embraces the principal peaks with their height in feet.

NAME.	HEIGHT.	NAME.	HEIGHT.
Popocatepetl.....	17,780.	Jorullo.....	4,150.
Iztaccihuatl.....	15,700.	De Agua (water volcano)...	15,000.
Orizaba	17,380.	De Fuego (fire volcano)....	13,800
Cofre de Perote.....	13,400.	Coseguina	
Colima.....	12,000.	San Salvador.....	9,000.
Toluca	15,250.	.....

PLATEAUS.

13. The plateau of the Anahuac, the highest table land of Mexico, is on an average 7,500 feet high. Bolson de Mapimi is a wild and rocky district in northern part of Mexico. The greater portion of Central America is a table land with an elevation of about 3,000 feet.

OBJECTS OF INTEREST.

14. These countries are exceedingly interesting in their antiquities. The Spaniards destroyed most of the Mexican records, or picture-writings, superstitiously regarding them as cabalistic. A few of these however remain, which show that they recorded events by paintings on skins. An *ancient calendar* was found, carved in porphyry; besides many other curious relics of ancient art. The territory of Mexico is scattered over with interesting vestiges of the ancient inhabitants.

Among these is the *Pyramid of Cholulu*, which is the largest of the kind in the world. It covers 13 acres of ground, and upon its summit stood an ancient Aztec temple dedicated to the Mexican god of Air, but it has since been replaced by a Roman Catholic chapel.

Pyramids, or *teocoelli*, are still numerous, most of which are supposed to be the work of the Aztecs. There are interesting ruins at *Mitla*, twenty-six miles east of *Oxaca*. Near *Palenque*, on the border of Yucatan, are the ruins of a great city, among which are many beautiful and interesting sculptures. "At *Uxmal* (ooxmahl) are ancient architectural remains of great interest." These, with other ruins in Guatemala and Yucatan, were probably the work of the *Toltecs*, who established themselves here after their expulsion from the Mexican valley.

LAKES.

15. There are numerous lakes of no great extent in the valley of Mexico, the waters of which are diminishing. *Tezcuco*, the principal, lies near the city of Mexico. It is 15 miles long and 9 broad, and its waters are strongly impregnated with salt, which supply a number of salt works on its banks. It contains the islands on which the Mexico of the Incas was built.

The celebrated *floating gardens*, formed by covering a sort of raft, composed of rushes and shrubs, with a layer of rich earth, were formerly numerous on the lakes; but most of those now called by that name are fixed, though some move from place to place.

Lake *Chapala*, in the state of Nalisco, is distinguished for the beauty of its scenery. Its area is estimated at 1,300 square miles.

Cayman or *Mapimi*, "alligator lake," is the name of a small lake in the north.

Lake Nicaragua lies in Central America, and is the largest lake of North America south of the United States. Its vicinity and islands contains numerous interesting relics of antiquity.

The lake is deep, and one of the proposed routes for an inter-oceanic canal is from this lake to the Pacific, a distance of only 18 miles.

Lake Managua, a beautiful body of water, is connected with the latter by the Rio Tipi tapa. The following are the dimensions of these lakes;

NAME.	LENGTH.	BREADTH.	AREA.	DEPTH.	HEIGHT ABOVE SEA-LEVEL.
Nicaragua	90	30	6,165	30 to 320 ft.	128 feet.
Managua	40	16	600	12 to 240 ft.	156 feet.
Chapala	50	30	1,300	30 ft.	6,400 feet.
Peten				200 ft.	

RIVERS.

16. *Mexico* is not well watered and is almost destitute of Navigable rivers. Scarcely 200 miles of river navigation can be claimed by this country. Nearly all the streams rise in the highlands, and rush toward the sea with great velocity, forming numerous rapids and cascades. In drainage *Central America* is similar to Mexico.

The following is a list of the rivers:

NAME.	LENGTH.	MILES OF NAV.	CHARACTERISTICS.
Rio Grand.....	1,800	500	It is generally a rapid stream and its navigation is hindered by sand-bars & rapids.
Rio de Santiago...	600	24	It is greatly interrupted by cataracts and is very rapid.
Rio de las Balzas ..	400		Not navigable on account of its rapids. Spotted Indians live upon its banks.
Verde.....	200		This river is of no commercial importance.
Tampico.....	200	40	Upper course rapid.
Santander.....	260	30	Its mouth is obstructed by sand-bars.
San Juan.....	100		Navigable throughout by boats of 8 to 10 tons burden.
Usumasinta.....	400	50	A precipitous stream.
Coaxacoalcos.....	100	30	Its lower course is very smooth.
Alverado.....	120		It is a very rapid and wild stream.
Tabasco.....	300		It is similar to the Alverado.

CLIMATE.

17. About one-half of these countries lie within the torrid zone, but the elevation of their surface modifies their climate in a striking manner. The *tierras calientes*, or hot lands, lie between an elevation of 4,000 feet and the sea. The *tierras templadas* or temperate lands lie between the elevations 4,000 feet and 6,000 feet. The climate here is perpetual spring. The *tierras frias*, or cold lands, occupy these regions having an altitude of more than 6,000 feet. Along the coast in many places the climate is very unhealthy. The northern parts bordering on Arizona and New Mexico have a dry climate, and irrigation must be practiced to raise good crops. The tops of the higher peaks are clothed in perpetual ice and snow. The year is divided into two seasons; the rainy, lasting about four months from the end of May, and the dry season, comprising the rest of the year. The rains fall generally in the afternoon while the rest of the day is perfectly free from clouds. These rains come with great suddenness and the water seems to fall almost in sheets.

SOIL.

18. The *low plains* on the coast are fertile and have a luxuriant vegetation. Much of the central *table-land* is dry and sterile, but in those parts which are well watered, the vegetation is remarkably rich and abundant.

VEGETATION.

19. Mexico is one of the most highly favored countries on the face of the globe; owing to the different elevations, she enjoys every variety of climate and productions, including all the products of the different zones. *Delicious fruits* abound, including yams, oranges, melons, citrons, bananas, figs, &c. The *maguey* or *agave* is a large and thrifty plant, which yields an abundance of juice, made into a kind of cider, called *pulque*, which is a favorite liquor among the people. When distilled, it is an intoxicating beverage, called *mexical*. One plant will yield six-hundred quarts in a season.

The *cochineal insect*, used for producing a red dye, is raised to a great extent by the Indians, who cultivate the *cactus* on which it feeds. Cotton, sugar, indigo, cocoa or chocolatenut, &c are extensively produced.

The *forests* along the coasts display all the grandeur of tropical vegetation and yield many valuable woods, among which may be enumerated, mahogany, Brazilwood, ebony, logwood and other dye stuffs.

The vegetation of Central America resembles that of Mexico. In the *uplands* of both countries there is a scarcity of forest trees, but an abundance in the low-lands.

MINERALS.

20. In the mountainous districts are the richest silver mines in the world, yielding about twenty millions of dollars annually. The gold mines produce the value of about one million of dollars annually. These *mines* are not so productive as under the colonial government. Copper, lead, tin, quicksilver, zinc, and antimony are plentiful. But little coal has thus far been discovered. Porphyry, jasper, alabaster, rock crystal, talc, arsenic, salt, are found in various places.

MANUFACTURES.

21. These consist chiefly of sugar, rum, aloes, wine and brandy, earthen and stone-ware, glass, paper, thread, olive oil. The manufactures have recently, by a successful movement, begun to extend and increase in importance.

COMMERCE.

22. The commerce of these countries is carried on chiefly by foreign nations. Great Britain, the United States, France, Germany, Spain, monopolize the principal part of the trade. The commerce of Great Britain with Mexico is nearly three times as extensive as that of the United States with the same country. The leading articles of *export* are gold, silver, copper, cochineal, deer-skins, hides, sisal hemp, mahogany, indigo, vanilla, sarsaparilla, cattle, jalap. The *imports* are linens, woolens, cottons, silks, wines, brandies, ornamental ware, glass, paper, millinery, iron-wares, salted and dried fish.

NATURAL ADVANTAGES.

23. The pupil should be required to give the natural advantages of these countries following the previous models.

ANIMALS.

24. Among the wild animals are deer, buffaloes, several varieties of the cat tribe, bears. The forests swarm with porcupines, weasels, skunks, sloths, gluttons, ant-eaters, armadillos. The condor, confined chiefly to the Andes, is here seen in the Cardilleras, and occasionally migrates within the territory of the United States.

Birds of gay plumage are common. *Monkeys* are numerous in southern Mexico and Central America.

A party of these will sometimes bridge a river by forming a string extending from the top of a tall tree on the one side, and then swinging the line across, the lower monkey catching hold of a tree on the opposite bank. Over this *living bridge* the others cross in safety.

The *domestic animals* are numerous, being easily raised on the table-lands. Some of the chief farms contain herds of 30,000 or 40,000 head of cattle.

Horses and cattle were brought from the Old World by the Spaniards, and many are now found wild on the extensive plains. Alligators, caymans, and serpents infest the wooded coasts.

INTERNAL IMPROVEMENTS.

25. There are scarcely any *public roads* of note; the only real important one extends from Vera Cruz to Mexico. Until quite recently nearly all the merchandize was carried on the backs of mules. *Numerous lines of railway* are in process of construction, which, it is hoped, will lead to the rapid development of these countries.

In a short time Mexico city will have railroad communications with all the important cities on both coasts of her own country, as well as with San Francisco, Denver, St. Louis, New Orleans.

and other cities of the United States. There are *no bridges* of any account, and the dwellings of the people, except those of the few wealthy, are miserable hovels. There are many elegant churches in the larger cities.

INHABITANTS.

26. About one sixth of the inhabitants are whites who are of Spanish origin; one half are Indians; and the remainder are mixed races—that is, *Mulattoes*, *Mestizoes*, or *Zamboes*. The *descendants* of Europeans, born in this country, are called *creoles*. The Indians to a great extent have become civilized, They are, however, a poor and degraded race. Like their ancestors they are fond of flowers, and display great mechanical ingenuity. In the northern part of Mexico and in some other places, there are many tribes which roam over the country and are in a savage state.

The whites retain a good deal of the Spanish character; they are fond of show, and are addicted to expensive pleasures; to bull-fights and religious processions. An embroidered veil, costly fan, and valuable jewels are the pride of the ladies. The men love to ride on horses with rich trappings.

NUMBER OF INHABITANTS.

27. The following is a list of the inhabitants:

MEXICO —9,908,000.

	NAME.	AREA.	POP'L'T'N.
CENTRAL AMERICA	Guatemala — — —	40,800.	1,191,000.
	Hondurus — — —	47,000.	352,000.
	San Salvador — —	7,300.	482,000.
	Nicaragua — — —	58,000.	300,000.
	Costa Rica — — —	31,500.	185,000.
		<hr/> 174,600.	<hr/> 2,510,000.

Among the natives in the *hot lands* the superiority in number of females is noteworthy.

OCCUPATION.

28. *Mining* is the great and absorbing pursuit, but is not carried on with the same skill as in the United States, and many mines formerly productive are now abandoned.

Agriculture is conducted without skill or industry, yet the products of grain, fruits, sugar, cotton, &c., are considerable.

The *commerce* is not extensive and is carried on chiefly by foreign nations.

Manufactures of cotton, wool, tobacco, and ornaments in gold and silver exist.

Nearly all the railroads are built by foreigners. The total length of railway lines in operation at present is about 1,200 miles. The *public highways* are infested with robbers called *banditti*, who rob travelers with impunity. There are many *beggars*.

ARMY AND NAVY.

29. The standing army of Mexico numbers 22,367 men. (1881) The navy consists of five gunboats. The National revenue is \$22,000,000, and public expenditures \$20,438,000.

The following table exhibits the standing of the Central American States.

NAME.	ARMY.	EXPORTS.	IMPORTS.	REVENUE.	PUBLIC DEBT.
Guatemala	2,180	\$4,425,000	\$3,035,000	\$4,535,000	\$7,334,000
Nicaragua	44,800	2,058,000	1,470,000	2,436,000	1,150,000
San Salvador	1,500	4,273,000	2,295,000	3,275,000	706,000
Honduras				400,000	30,000,000
Costa Rica		5,307,000		2,379,000	7,134,000

LANGUAGE.

30. The *Spanish* is the prevailing tongue among the white inhabitants, but a great diversity of languages and dialects is spoken among the mixed races and Indians. It is estimated that 50 *different languages* and more than 150 dialects are in use.

GOVERNMENT.

31. Mexico and the Central American States are *federal republics*, modeled after that of the United States, to a great extent. But they are not prosperous, because not well administered. A great deal of anarchy has existed among the different states.

Mexico consists of 27 states, one territory, (Lower California), and the federal district. Central America consists of five independent republics. All the presidents are elected for four years, except in Guatemala where six years is the term of office.

EDUCATION.

32. Public instruction is making considerable progress in most of the states. However education is still at a very low ebb and the great masses of the people are very ignorant. In the larger cities there are some advanced schools. Among the upper classes the men are often well informed while the education of the *women* does not extend beyond a knowledge of reading, writing, and music. Honduras is in a *very degraded* condition.

RELIGION.

33. The Roman Catholic religion is predominant in all the states, but *all creeds* are tolerated. The Indians mingle some of their ancient Mexican Idolatries with the Catholic ceremonies.

CITIES.

34. *Mexico*, the capital and largest city of Mexico, is situated in a beautifully cultivated valley 7,500 feet above the sea-level, and encircled with snow-capped-volcanic mountains, which afford a delightful picture.

On Lake Tezcuco, which is near the city, are extensive *floating gardens*, which supply the city with fruit and vegetables. Formerly the lake surrounded the city, but it has gradually shrunk, so that it now is three miles from the city. It is surrounded by walls and entered by gates. The houses are nearly all built of stone and some are noted for their costliness. To the stranger, the *markets* form a striking feature. Schools and churches are numerous.

Vera Cruz, (the "rich city of the true cross") is situated in a sandy, marshy, and unhealthy region on the Bay of Campeachy.

It presents an *imposing appearance* from the sea and is strongly fortified. The streets are regular and the houses are built of coral limestone. Its *harbor* is a mere roadstead and affords very insecure anchorage. The tide here rises and falls only once in 24 hours.

Pueblo, "the city of angels," so named from its beautiful situation, is noted for its numerous and elegant churches. Some of them seem to be almost inlaid with gold and silver. It manufactures glass, shovels, pottery, earthenwares, soap, etc.

Acapulco, on the Pacific, is remarkable for its fine harbor.

Guanajuato contains many elegant private residences.

Managua, the capital of Nicaragua, is situated on the southern shore of the lake of the same name. Its environs are picturesque.

New Guatemala is in a fertile valley and enjoys a delightful climate.

Old Guatemala, the former capital, was *destroyed* by an *earthquake* in 1773 and 40,000 of its inhabitants perished.

The present capital was built in 1776. The houses are generally of one story, with walls three feet thick on account of the frequency of earthquakes; they are provided with gardens and fountains. The streets are broad, clean, and straight. It contains above 60 ornamental churches besides many other handsome buildings.

San Salvador, the capital of the state of the same name, is agreeably situated in the midst of fine indigo and tobacco plantations, and has an active commerce and extensive manufactures.

Comayagua, the former capital of Honduras, contains a college. The *country around* abounds in many remarkable ruins, and gives evidence that it was once the seat of a dense population.

Tegucigalpa, the present capital of Honduras, is on a lofty table-land and is the largest and finest city of the republic. In its vicinity are mines of gold, silver, and copper.

San Jose, the capital of Costa Rica, lies in a picturesque valley 4,500 feet above the level of the sea. The streets are regularly laid out and the houses are low and devoid of beauty.

Population of the principal cities of Mexico and Central America.

MEXICO.

Mexico City	250,000.	Guadalajara.	80,000.
Puebla.	65,000.	Cuernavaca.....	65,000.
Guanajuato.....	62,000.	San Luis Potosi.....	40,000.
Morelia	30,000.	Merida	30,000.
Queretaro	28,000.	Oajaca.....	27,000.
Colima	25,000.	Saltillo.....	26,000.
Aguas Calientes	32,000.	Vera Cruz.....	10,000.

CENTRAL AMERICA.

Guatemala	45,000.	Managua.....	7,000.
Tegucigalpa.....	12,000.	San Salvador	16,000.
San Jose.....	26,000.	Comayagua	10,000.

HISTORY.

35. Soon after the Spaniards had discovered America, they heard vague rumors. In 1519, Fernando Cortez went thither with about 600 men. He found Mexico to consist of a great kingdom, under the government of a king named *Montezuma*.

The population of the country was supposed to be eight millions. The inhabitants had made great progress in civilization.

They built large cities, with lofty pyramids, temples, and palaces. They cut the hardest stone, smelted and wrought copper, gold and silver, recorded events by paintings, and had a correct calendar. There existed a regular gradation of ranks in the empire; the pride and power of the nobles contrasting with the slavish condition of the people.

Tenochtitlan, the capital, on the site of the modern city of Mexico, was built in the midst of a lake; had regular streets, and a market square, often containing 50,000 people. The population was 300,000. The city was connected with the mainland by *causeways* of earth and stone, one of which was seven miles long. The palace of the emperor was magnificent. The chief temple was of vast extent; and here the *bloody rites* of Mexican superstition were

performed. Human victims, consisting of captives taken in war, were sacrificed in such numbers as to make the place seem like a *slaughter* house. On the lake around Mexico were hundreds of floating gardens, covered with flowers and vegetation. One hundred thousand canoes plied upon its waters; and along its borders were no less than fifty cities.

Cortez having learned of the wealth of this empire, determined to proceed to the capital. Persuading large numbers of the Tlascalans to join his little army he marched toward Mexico. As he approached, *Montezuma* sent him rich presents, and endeavored to persuade him to quit the country.

He, however, advanced boldly; and, as he entered the capital, was received with imposing ceremony by the king. Nothing could exceed the astonishment of the Spaniards at witnessing the abundance of gold, silver, and precious stones. Incited by avarice, *Cortez* laid his plans deeply and proceeded to overturn the empire. He seized the person of the king, who soon afterward died of a wound. A fierce conflict followed, and the Spaniards were driven from the city. They speedily returned, and, aided by their Indian allies, made themselves masters of the place. The great *empire of Montezuma* fell to pieces, and the whole country became a Spanish province. Thus it continued for nearly 300 years. In 1810 the Mexicans rose against the Spanish dominion; and after ten years of varying fortune, they became independent.

In 1824 they adopted a constitution similar to that of the United States. Notwithstanding this, it has been perpetually distracted by civil war, promoted by rival military leaders aiming at dominion.

Texas separated itself from the republic in 1835. In 1846, Mexico became involved with the United States, chiefly owing to a dispute about Texas. Several battles were fought at Palo Alto on the 8th of May, and at Resaca de la Palma on the 9th. In both these the Americans, led by General Taylor, were victorious. Monterey, a large town in the north, near the Rio Grande, capitulated to the Americans on the 24th. In March, 1847, the city and castle of Vera Cruz were taken, and General Scott marched toward the capital. At *Cerro Gordo* he obtained a complete victory over the enemy on the 17th of April. Thence he marched onward, successively occupying the cities of Jalapa and Puebla. Nearly all the towns on the coast were in possession of the Americans. On the 17th of February, General Taylor, with 4,000 men met Santa Anna at Buena Vista with 20,000, beating and scattering the entire force.

On the 15th of September the Americans entered Mexico, and took possession of that Capital. Negotiations followed, and peace was ratified in 1848. By this the Rio Grande and Gila were fixed as the *boundaries* between the two countries; and in 1854 an additional territory was ceded to the United States.

CENTRAL AMERICA was conquered by Alverado, who was sent hither immediately after the conquest of Mexico by Cortez in 1523. It threw off the Spanish yoke in 1821. For two years it was united under the government of Mexico, and in 1823 became the the United States of Central America.

States rights finally prevailed and they are now separate independent republics, but anarchy and confusion has reigned supreme.

BELIZE. This province deserves special mention. It is a strip of land where the British have a colony. The country produces logwood, fustic, braziletto, sarsaparilla, cedar, cotton, indigo, &c. Wild animals, birds, fish and turtle are abundant. The inhabitants are chiefly Indians and Negroes.

Belize, the capital, has a large trade and is surrounded by a cocoanut plantation.

Questions on the History of Mexico and Central America.

Who discovered Mexico? Who was king at the time of the discovery? What was the condition of the inhabitants? Who conquered Mexico? How long was Mexico subject to Spain? When did it become independent? When did Texas revolt? At what time did the Mexican war take place? Who were the leading generals on the American side? Who, on the Mexican? What was the result of the war? Give the history of Central America.

WEST INDIES.

MAP EXERCISES.

Locate the following:

CAPIES.—San Antonio, Corrientes, Cruz, Lucretia, Engano.

GULFS AND BAYS.—Buena Esperanza, Nipe.

CHANNELS, STRAITS, ETC.—Yucatan, Windward, Mona, Florida, Great Bahama Bank.

ISLANDS.—Cuba, Hayti, Jamaica, Porto Rico, Greater Antilles, Lesser Antilles, Bahamas, Windward, Leeward, Isle of Pines, St. Andrews, Great Abaco, Cat, Great Inagua, St. Thomas, Guadeloupe, Dominica, Martinique, St. Vincent, Grenada, Trinidad, Margarita, Curacao, Tortuga.

MOUNTAIN RANGES.—Organ, Sierra Maestra, Cibao, Blue.

LAKE.—Salt Lake.

RIVERS.—Cauto, Artibonite.

CITIES.—Havana, Matanzas, Puerto Principe, Santiago de Cuba, Kingston, Spanish Town, Port au Prince, San Domingo, San Juan, St. Thomas, Nassau, Spanish Port.

RELATIVE POSITION.—In what direction is Havana from Spanish Town? from St. John? from Trinidad? from Vera Cruz? from Pensacola? from New York? from Rome?

TRAVELS.—Trace a water route from Havana to St. Louis ; to Chicago ; to Baltimore ; to Columbus ; to Spanish Town.

MISCELLANEOUS.—What is the latitude of the following places ? Havana, Port au Prince, St. John. What is the longitude of the same places ? In what direction would your shadow fall to-day at San Domingo ? What is the distance in miles on a straight line from San Domingo to Havana ? to St. John ? to Spanish Town ? to South America ? to Cape Gracias a Dios ? What cities in the U. S. have nearly the same longitude as Havana ?

DESCRIPTION.

POSITION.

1. The West Indies consist of a vast archipelago, lying between the Gulf of Mexico, the Caribbean sea and the Atlantic ocean. In latitude they extend from 10° to 28° north ; in longitude from 59° to 89° west.

EXTENT.

2. They extend in length 1650 miles, and 1250 miles in breadth. Area, 96,000 square miles.

DISTANCES.

Havana to	New York	—	—	—	—	—	—	1,400.
"	"	Mexico	—	—	—	—	—	1,050.
"	"	Toledo	—	—	—	—	—	1,300.
"	"	San Francisco	—	—	—	—	—	2,400.

COAST.

3. There are a number of deep inlets along the coasts of the larger islands, and some excellent harbors. Cuba has over 2,000 miles of sea coast.

CAPIES.

4. Cape Corrientes and San Antonio project from the west coast of Cuba ; Cape Creux from the south-eastern.

GULFS AND BAYS.

5. The most important inlet is Buena Esperanza bay on the south-eastern coast and tributary to the Caribbean sea. The other bays are mostly small.

CHANNELS AND STRAITS.

6. The following is a list of the principal channels and straits:

	WIDTH.		WIDTH.
Yucatan	120.	Florida	45.
Windward Passage	48.	Mona	80.

ISLANDS.

7. The following is a list of the principal islands:

NAME.	LENGTH.	BREADTH.	AREA.	POPULATION.
Cuba	650	50 to 60	43,319	1,400,000
Hayti.	41	60 to 150	29,837	708,500
Jamaica	140		4,250	506
Porto Rico.	90	63	3,800	636,000
Isle of Pines.	60	55	600	2,000
Trinidad.	50	30	1,754	110,000
Bahama.	600		3,000	40,000

There are about 1,000 islands altogether, of which 600 are contained in the Bahama group.

SURFACE.

8. More than four-fifths of the surface of Cuba is *lowland*, but it is traversed in various directions by ranges of mountains, some of which rise to a height of 7,675 feet. The centre of the island of Hayti is a *mountain region* while along the coast are *extensive plains*; the largest is in the south-east, 80 miles in length. Jamaica is diversified with mountain, hill and plain. Of the 600 Bahamas, but 17 are inhabited; the *surface* of most of them is *so low and flat* that the waves of the sea sometimes sweep across them. Many of the Lesser Antilles are mere rocks projecting above the sea; others are rugged and volcanic.

MOUNTAIN RANGES.

9. The Organ mountains intersect Cuba lengthwise; the highest peak is Pico Turquino, "blue peak." The Blue mountains are in Jamaica, and the Cibao in Hayti.

OBJECTS OF INTEREST.

10. Many of the larger islands contain much fine scenery. The *Pitch Lake* on the island of Trinidad is the most remarkable phenomenon: it is $1\frac{1}{2}$ miles in circumference and of unknown depth. The pitch on the sides is hard and cold, but in the centre, is a boiling liquid. It yields pitch and petroleum. From it a substance is made with which some of the streets of Paris are paved. The *island of St. Vincent* contains the remarkable volcano Soufriere, noted for its tremendous eruptions; its *crater* is 3 miles in circuit and 500 feet deep.

LAKES.

11. Lakes are numerous but small and for the most part unimportant. The largest is *Enriquillo*, of Hayti, 20 miles long and 8 wide. It is salt. From some of the *salt lakes* considerable salt is obtained.

RIVERS.

12. The rivers are short and generally precipitous. The *Cauto* of Cuba is the largest; length 70 miles.

SOIL.

13. The soil of the West Indies is remarkable for its fertility and productiveness.

CLIMATE.

14. The climate of these islands is for a great part of the year mild and pleasant, the heat being in some measure moderated by the uniform length of the nights, and by refreshing sea breezes. The average temperature ranges from 73° to 78° in the different parts. The *seasons* are divided between the wet and the dry; the former occurring in May and October, are of short continuance, and during the rest of the year the sky is clear, and the nights are remarkable for their brilliancy. Some parts of Cuba are subject to *droughts*. In the interval between the months of August and October, the islands are visited by those *terrible storms*, called hurricanes, to which the regions of the torrid zone are liable.

They begin in various ways, but are, in general, preceded by a profound calm; this is soon followed by a chaos of varying elements, lightning, and thunder, rain, hail, and impetuous blasts of wind which move with a swiftness exceeding that of a cannon ball. Corn, vines, forests, and houses are swept away before their violence which, however, is of but short duration. These tempests are of electric origin and serve the purpose of purifying the atmosphere.

AGRICULTURAL PRODUCTIONS.

15. The West Indies abound in all the productions of warm climates; the fruits are shaddocks, oranges, lemons, pine-apples, bananas, plantains, &c.; maniac, yams, maize, &c., with sugarcane, guava, cocoa, cotton, coffee, indigo, tobacco, &c., are the staple products. *Two crops of corn* may be raised each year. The forests contain mahogany, lignum-vitae, ironwood, and other woods useful in the arts. Dye-stuffs and drugs are common.

MINERALS.

16. Coal exists in considerable quantities in Cuba; copper is also abundant. The other most important minerals are, gold, silver, platinum, mercury, iron, tin, sulphur, manganese, antimony, rock-salt, bitumen, jasper, and marble. The mineral resources are yet imperfectly developed in most of the islands.

MANUFACTURES.

17. The manufactures are limited, consisting chiefly of sugar, cigars, and all kinds of prepared tobacco; the tobacco of Cuba is noted for its aromatic qualities and is regarded the finest in the world.

COMMERCE.

18. The commerce of these islands is extensive and valuable, and is carried on chiefly with the United States, England, and Spain. The chief *exports* are sugar, molasses, leaf tobacco, cigars, coffee, wax, of which the United States purchases to the amount of \$15,000,000 annually. The leading *imports* are jerked-beef, codfish, flour, rice, lard, lumber, wines, oats, olive oil, coal oil. Of these articles, the lard, oats, lumber, coal oil, and whale oil come from the United States.

ANIMALS.

19. The wild-boar, monkeys, and lizards of various kinds are found. Fish are very abundant. Sea-turtle are common along the shores. Birds are characterized for their beautiful and varied plumage and lack of song. Macaws, parrots, wild Guinea-fowl, quails, pigeons, water fowl, the humming bird, mocking bird, &c., are common.

INTERNAL IMPROVEMENTS.

20. The *roads* formerly were very poor, but of late years many good roads have been built. *Railroads* now connect all the most important places. Some fine *public buildings* are to be seen in the cities, but many of the streets are ill-paved. Whole number of miles of railroads is about 600.

INHABITANTS,

21. The *inhabitants* of the West Indies are whites, negroes, and mixed races, the negroes comprise six-sevenths of the whole population. In the Spanish possessions two-thirds are slaves. The *native races* of these islands are now extinct. When these islands were first discovered by the Spaniards, they were inhabited

by a mild, peaceful and numerous people, who had made some advancement in civilization, but they were reduced to a state of slavery by their cruel conquerors and worked to death. Many negroes were also brought from Africa and made slaves of. It is said that Africa was drained of not less than 40,000,000 inhabitants to supply the *slave trade* of America. Total population of the West Indies, 4,382,000.

OCCUPATION.

22. The leading pursuits are raising and gathering tropical fruits, agriculture, grazing, and manufacturing. But the people in general are not noted for industry.

LANGUAGE.

23. These islands are all, except Hayti, foreign possessions and the inhabitants speak the language of the countries by whom they were colonized. The majority of the people speak Spanish.

GOVERNMENT.

24. San Domingo is divided into two states, each of which are independent republics. Cuba, Porto Rico, and the Isle of Pines belong to Spain. The Bahama, Jamaica, and most of the Lesser Antilles belong to Great Britain; Guadeloupe, Martinique, Marie Galante, belong to France. Curacoa, Buen Ayre, Oruba, Los Roques, St. Eustatius, Saba, belong to Netherlands; St. Johns, St. Thomas, and Santa Cruz, belong to Denmark; St. Bartholemew, Tortuga, Margarita, belong to Norway and Sweetlen.

EDUCATION.

25. Education is at a very *low ebb* in most of the West Indies. A number of schools and colleges exist; these afford advantages for the upper classes; *Private schools* are supported in many places. About 40% of the whites and 5% of the blacks are able to read and write.

RELIGION.

26. The religion is chiefly Roman Catholic, except in the British possessions where protestantism generally prevails.

CHIEF CITIES.

27. *Havana*, the capital and chief city of Cuba, situated on the

northern coast, is one of the largest and richest cities in America, and has one of the best harbors in the world.

The entrance of the port is defended by two forts, and several other military works, which render Havana one of the strongest places in the world. The buildings are less remarkable for their beauty than for their solidity, and the streets, are in general, narrow, dirty, and unpaved. There are, however, some fine public walks and handsome edifices. The climate is unhealthy for strangers.

Sixty miles to the east is *Matanzas*, a flourishing place, upon a fine harbor, and healthy situation. Its commerce is extensive and increasing. *Puerto Principe*, lying in the interior, is remarkable only for its narrow, winding, and filthy streets.

Santiago is a flourishing place on the southern coast. Its harbor is excellent, but the town is unhealthy. *St. John* the capital of Porto Rico, has a spacious and well fortified harbor, and considerable commerce. *Kingston*, the principal city of Jamaica, is well built, with broad, straight streets, handsome houses and has an excellent harbor. Its commerce is extensive. *Port Au Prince*, the capital of Hayti, is a well built city on a safe and convenient harbor on the western coast. *St. Domingo* is the capital of Dominica.

CITIES.	POPULATION.	CITIES.	POPULATION.
Havana.....	206,000.	Matanzas.....	36,000.
Kingston.....	34,000.	Port Au Prince.....	31,000.
St. John.....	27,000.	San Domingo.....	12,000.
Santiago.....	45,000.	Puerto Principe.....	31,000.
Spanish Port.....	20,000.	Spanish Town.....	6,000.

HISTORY.

25. The *first land discovered* by Columbus in America was one of the Bahamas, Guanahana, now Cat Island. They remained uninhabited till 1629, when a settlement was made by the English at New Providence. *Cuba* was discovered by Columbus on his first voyage in 1492. It was then very populous. The Spaniards made their *first settlement* in 1511; and in a few years they exterminated nearly all the natives. It has been the scene of frequent revolutions. *Porto Rico* was discovered by Columbus in his second voyage, in 1493. Juan Ponce de Leon planted a *colony* here in 1509. The *natives* supposed to number 600,000 shared the same fate as those of the other Spanish islands and soon disappeared under the *oppressions* and *persecutions* of their cruel masters. In the latter part of the 17th century, it was taken by the English, but soon abandoned. Since then it has remained a Spanish colony.

Hayti was the first island occupied by the Spaniards. The island was found to contain a numerous population. Harassed and oppressed beyond endurance, by the Spaniards the natives fled to the mountains, where they were *pursued by dogs*, and shot down by soldiers, so that in the space of a half century *nearly the whole population* numbering half a million had wasted away from the island. After this, it with other islands, was exposed to the atrocities of the *Buccaneers*, who came in pursuit of cattle, but afterwards became formidable pirates. After the *Expulsion of the Buccaneers* from Hispaniola or Hayti the French made settlements there; and at length in 1631, the court of Spain ceded to France the western half of the island, the eastern portion continuing to be occupied by the Spanish settlers. Such was the state of things at the commencement of the French revolution. The *National Assembly* abolished slavery in all French colonies. Excited by a wild impulse, the slaves of this island were thrown into a state of insurrection. A scene of *fearful bloodshed* and desolation followed. All the whites on the islands either fled or were massacred. After a series of changes in government it was *finally divided* into two independent powers. *Jamaica* was discovered in 1493 by Columbus, but the Spaniards not finding any gold here, paid little attention to the island. It was subsequently captured by the English, and under their government, soon rose to importance. In the height of its prosperity, its capital, *Port Royal*, a splendid and opulent city, was destroyed by a *dreadful earthquake*, burying thousands of inhabitants in the ruins, and engulfing millions of wealth in the sea.

Bermudas.—Though not strictly belonging to the West Indies, these will be described here. They lie to the north-east of the Bahamas, and consist of a group of small islands, (365) and are visited by *terrible storms*. They have a beautiful climate, and the soil yields every variety of tropical vegetation. The seas around are stored with fish, turtle, and whales. The oysters on the rocks sometimes contain pearls. North Carolina the *nearest land* is 600 miles distant. These islands were discovered by *Juan Bermuda*, a Spaniard, in 1522, but were subsequently taken by the English. Area, 19½ sq. mi.; population, 13,500.

SOUTH AMERICA.

MAP EXERCISES.

Locate the following:

- CAPES.—Gallinas, St. Roque, St. Thome, Frio, San Antonio, Corrientes, Blanco, Horn, Tres Montes, Parina, St. Helena, Pta Aguja, Orange.

GULFS AND BAYS.—Arica, Guayaquil, Choco, Panama, Venezue-

la, All Saints, Formosa, Laguna Dos Patos, San Matias, St. George.

ISLANDS.—Trinidad Margarita, Curacao, Marajo, Falkland, Staten, Tierra Del Fuego, Desolation, Wellington, Chiloe, Chonas Archipelago, Galapagos, Juan Fernandez, Chinchu, Lobos.

MOUNTAIN RANGES.—Andes, Acarai, Parima, Organ, Sra De Mar, Sra Manteiqueira, Sra Espinhaco, Sra De Tabatinga, Pireneos, Geral.

MOUNTAIN PEAKS.—Stokes, Yanteles, Osorno, Cayambe, Cotopaxi, Chimborazo, Arequipa, Sahama, Gualatieri, Nevado De Sorata, Aconcagua, Tupungata, Sarmiento, Itatiaya, Itacolumi, Itambe.

LAKES.—Maracaybo, Porongos, Bevedero, Titicaca.

RIVERS.—Amazon, Rio Negro, Orinoco, Purus, Magdalena, Japura, Madeira, Jurua, Tapajos, Ninga, Tocantins, Javari, Ucayale, Huallaga, Meta, Guaviare, Apure, Casiquiare, Parana, San Francisco, Para, Rio De La Plata, Uruguay, Paraguay, Vermejo, Salado, Pilcomayo, Colorado, Mamore, Guapore, Surinam.

TOWNS.—Rio Janeiro, Bahia, Buenos Ayres, Montevideo Assumption, Santiago, Sucre, Potosi, La Paz, Lima, Callao, Arequipa, Quito, Riobamba, Bogota, Panama, Cartagena, Maracaybo, Caracas, La Guayra, Georgetown, Paramaribo, Cayene, Obidos, Para, Santarem, Mendoza, Parana, Concepcion, Valparaiso, Cobija, Chagres, Aspinwall, Pasto, Guayaquil.

RELATIVE POSITION.—In what direction is Bogota from Caracas? Rio Janeiro? Lima? Montevideo? Galapagos Isles? Cape Orange from Bahia? Cotopaxi? Buenos Ayres? Horn? Gallinas?

TRAVELS.—What countries would you cross in traveling by land from Cape Horn to Panama? from Santiago to Bahia? to Cayenne? Trace a water route from Assumption to Rio Janeiro; to Santiago; to Vera Cruz; to Chicago; to London; to Baltimore; to Obidos; to Olympia.

MISCELLANEOUS.—Of what does the greater part of South America consist, plains or mountainous country? Locate the principal plains. How do you account for the absence of large rivers west of the Andes? Give the latitude and longitude of all the capitals. What states are crossed by the equator? what by the prime meridian of Washington? What countries border on the Pacific? In what direction would your shadow fall at noon to-day in Chili? Does the sun set at Rio Janeiro before or after it sets at Washington? What is the difference of time? How does the time at Lima differ from that of Washington? How did America receive its name?

DESCRIPTION.

POSITION.

1. (1) It is bounded on the north by the Caribbean Sea, and on the east by the Atlantic ocean; on the south by the Atlantic and Pacific; and on the west by the Pacific and Central America. (2) It lies between the parallels 55° south and 11° north latitude, and between the meridians 35° and 82° west longitude.

EXTENT.

2. It is 4,800 miles long and 3,000 miles wide. Area is 7,642,000 square miles.

Distances from Rio Janeiro.

To Bogata.....	2,700 miles.	To Lima.....	2,300 miles.
To Cape Horn.....	2,600 "	To Obidos.....	1,625 "
To Panama.....	3,150 "	To Buenos Ayres.....	1,250 "

COAST.

3. *General Outline.*—The coasts of South America are less regular than those of North America. Few indentations of great extent exist but there are many *harbors*, some of which are among the *finest known*. In some places the coast is *low and marshy*, and the harbors are shallow; and in other places along the Pacific, the shores are bold and rocky. The coast line measures 16,500 miles.

CAPES.

4. The most prominent capes are Gallinas on the north, San Roque on the east, Horn on the south and Parina on the west. Cape Frio is a huge mass of granite 1,570 feet high; other capes are Orange, Corrientes, Blanco, etc.

GULFS AND BAYS.

5. Guayaquil is in the western part of Ecuador; Venezuela has a shallow Gulf in the north; Arica lies west of Peru, etc. It will be observed that the *gulfs and bays* are small and few in number.

SEAS AND CHANNELS.

6. The *Caribbean* sea washes the northern shores of Colombia.

a and Venezuela and affords some valuable harbors. The *strait Magellan* is between the Tierra Del Fuego islands and the main land; it is 300 miles long and from 5 to 20 miles wide, and difficult of navigation. Tides rise here to the height of 50 feet. This strait was discovered by Magellan, a Portuguese navigator, 1520.

ISLANDS.

7. The *Falkland Islands* are about ninety in number. They are cold and desolate, but important as furnishing harbors for haling vessels. They belong to Great Britain. The islands *Tierra Del Fuego*, or *Land of Fire*, received their name from the volcanic fires seen in them. This is the most southern inhabited part of the globe.

They are mountainous and the soil consists of swampy peat; and, to the height of 1,500 feet, forests of beech cover the island. The coasts are rocky and are beset with frequent tempests. They are inhabited by a few rude, poor, ignorant but peaceable natives, who live by fishing. They are the resort of numerous sea-fowl.

Staten land to the east has an English settlement. There are numerous islands skirting the western shores of Chili, but they are for the most part desolate and sterile. The *Lobos* and *Chincha* lands on the coast of Peru are noted for their rich deposits of guano, the offal of sea-fowl and seal. They are destitute of rain and are utterly barren. *Juan Fernandez* lies west of Chili and was for several years the solitary residence of *Alexander Selkirk* whose adventures gave rise to the famous *Robinson Crusoe*. Rich copper mines are found here.

The *Galapagos*, or *Turtle Islands* lying west of Ecuador received their name from the immense tortoises existing there. These islands belong to Ecuador.

Falkland.....	4,700 sq. mi.		
Trinidad.....	1,754 "	"	"
Parajó.....	2,200 "	"	nearly.
Tierra del Fuego.....	3,000 "	"	"
Philoe.....	3,846 "	"	"

PENINSULAS.

8. The peninsulas of South America are few and small in size. The following are the chief: *Paraguana* from Venezuela, *Tres Montes* from Chili, and *St. Joseph* from south eastern Argentina.

GENERAL CHARACTERISTICS OF THE SURFACE.

9. South America is noted for its long and lofty range of mountains, its numerous volcanoes, its extensive plains, great rivers, and rich minerals. In its surface it somewhat resembles North America. The Andes in the west while not so broad as the Rocky, are higher and more abrupt. The ranges along the eastern shore correspond to the Apalachians but are not quite so high. The surface may be divided into three parts—the western, middle, and eastern.—The *western* consists of an extensive plateau, elevated nearly 12,000 feet above the sea-level and surmounted by the lofty Andes. The *middle* lies to the east of this and is several times broader. Within this great belt are found the Pampas of Argentina, the Llanos of the Orinoco, the plateau of Guyana, the table land of Brazil, and the great Selvas of the Amazon.

Nothing can exceed the fertility and the rich vegetation of these regions.

The *eastern* portion, embracing the eastern part of Brazil, is moderately elevated.

MOUNTAIN RANGES.

10. There are three systems of mountains in South America. The *Andes* begin in the southern part of Patagonia, and extend to the isthmus of Panama, where they are connected with the great chain of North America. Their general course is along the Pacific about 180 miles from the coast. They consist of isolated peaks covered with perpetual snow. Sixty of them are volcanic and always active. *Mount Srata*, in Bolivia is the highest mountain in the western continent. The *Brazilian Coast* ranges are of no great elevation.

The *Parima mountains* extend along the southern shore of Venezuela and the *Acarai* are on the boundary between Guyana and Brazil.

MOUNTAIN PEAKS.

11. South America is especially noted for its lofty peaks. *Cotopaxi*, *Gualaticri*, and *Chimborazo* are among the most noted volcanoes.

The *former* is the most terrific volcano in the world. The noise of its eruptions have been heard for more than 600 miles and flames have been seen to shoot from its summit one-half mile.

The following are some of the principal peaks:

Gualatieri.....	21,960 feet.	Cotopaxi.....	18,880 feet.
Chimborazo.....	21,420 "	Sorata.....	24,812 "
Aconcagua.....	22,420 "	Illimani.....	21,224 "
Potosi.....	16,150 "	Cayambe.....	19,535 "
Sahama.....	22,350 "	Tolima.....	18,120 "
Duida.....	8,000 "	Andes (mean height)	12,000 "

PLAINS, PLATEAUS, ETC.

12. *The Pampas* are extensive plains of Argentina. They resemble our prairies. They cover an area of 1,600,000 square miles, and in many places are as level as the sea with not an object to break the monotony. During the wet season they are covered with a rich vegetation. Thistles grow here from 10 to 15 feet high. During the dry season they become arid wastes.

The *seltas of the Amazon* is the most extensive forest region in the world. The trees are of the most gigantic size and endless variety.

So dense are they that it is almost impossible to penetrate them. Climbing vines bearing leaves and flowers of the most exquisite beauty, hang from the trees. The whole is so completely matted together that if you should attempt to pull one tree away you would have to pull the whole forest.

Birds of the most gaudy plumage, like gems in the sun light, are seen flitting among the branches and seem to heighten the beauty of the magnificent forest. Its area is 700,000 square miles.

The Llanos of the Orinoca occupy an extensive treeless region in the northern part of South America. During the rainy season it is a vast meadow covered with the finest of vegetation to such an extent that it is called the "sea of grass." Millions of horses and cattle find subsistence upon it.

Before the dry season has ended it becomes a scorched and arid desert, and the winds whirl the dust in dense clouds. The *cattle* during this season betake themselves to the mountains and the reptiles, such as *alligators* and *serpents*, bury themselves in the mud there to remain in a *torpid state* until the return of the tropical rains. It has an area of about 160,000 square miles.

The *Pampas del Sacramento* are vast plains in the north-eastern part of Peru, and embrace the valley of the Ucayale. They cover an area of 60,000 square miles; though in most parts without trees, in other places they are covered by dense and magnificent forests.

DESERTS.

13. *The Desert of Attacama* lies on the west, between the Andes and the Pacific. It is a sandy sterile region, 450 miles long by

about 50 in width. In this region it never rains. The *Desert of Sechura* in the north of Peru is seventy-five miles long. A large district of the plateau land of Bolivia is called "*the Despoblado*," or "*the Uninhabited*," from the dryness and severity of the climate. The *Desert of Pernambuco*, in the north-eastern part of Brazil, consists of hillocks of moving sand, with an occasional oasis or fertile spot. It is very extensive.

NATURAL CURIOSITIES,

14. South America is not lacking in objects of interest. The great mountain chains abound in gorges, deep and gloomy valleys, magnificent cascades, sublime views. The scenery of the Guyanas is wonderfully picturesque.

The Great Koietaur makes a single leap of 822 feet. The immense "*breaks*" of the Andes are among the grandest features.

Huge walls of almost perpendicular rock are on either side. A curious spectacle is to be witnessed at the return of the rainy season in the Llanos of the Orinoco. The moistened clay on the margins of the swamps is sometimes seen to blister and rise slowly in a kind of a mound; then with a violent noise like the out break of a small mud volcano, the heap of earth is cast high into the air, and forth issues the gigantic water snake and scaly crocodile which has lain hid in the dried up mud, during the dry season.

The extensive plains by their rich and varied vegetation are objects of great interest to the traveler.

LAKES.

15. This continent is deficient in lakes. The largest is the lake *Titicaca*, on the boundary of Peru and Bolivia; it is 240 miles in circuit, 600 feet deep and covers an area of 4,000 square miles. Evaporation, because of the rarefied air, is enormously active.

It is the highest in South America and is one of the highest in the world, having an altitude of 12,900 feet above the sea level. There are many ancient ruins and the history is interesting. It empties itself through the *Desaguadero* river into lake Aullaga. The latter is salt.

Lake *Maracaybo* is sometimes called a gulf. It is situated in the north-western part of Venezuela, and is about 150 miles long and 75 wide. The water is brackish and too shallow to float large boats. It is connected with the sea by a channel 45 miles long and from 4 to 14 miles wide.

On the north-east shore there is a mine of mineral pitch, which, during the hot month emits a phosphorescent light resembling lightning, and is called by navigators the "Light house of the Maracaybo."

Lake *Valencia* in Venezuela is 34 miles long. There are a number of small shallow lakes in Argentina, but as many of them

entirely disappear during the summer, they are unimportant. Porongos and Bevedero are among the principal.

RIVERS.

16. South America is one of the finest watered countries on the globe. The Amazon though not the longest is the largest river in the world. It has twelve tributaries, each more than 1,000 miles in length.

The Amazon with its tributaries affords not less than 50,000 miles of steamboat navigation. It has 1,500 navigable tributaries. The first 500 miles of its course is a continuous series of rapids, but from this the current is easy and graceful. At a distance of 2,000 miles from its mouth it is 3 miles wide and increases in width to its mouth which is an estuary 180 miles wide. Tides are perceptible 400 miles from its mouth; they usually move this distance in six hours, but sometimes they occupy but a few minutes when the tide wave is 12 to 15 feet high, and, with a roar that can be heard 5 or 6 miles, rushes up this whole distance with a destructive energy that carries ruin to every thing in its way. Such a tide is called a bore.

The *Orinoco* is a deep sluggish stream with not less than 400 navigable tributaries.

This river has so little fall that the winds drive the waters up the stream sometimes causing disastrous inundations.

During the rainy season which occurs in July and August the river is very high. Large areas are covered with water and the lower valley is converted into an inland sea. Near its mouth it is about 65 fathoms deep. Just above the deltas the river is 4 miles wide and empties its waters into the sea through 50 mouths.

The *Rio de la Plata* is a river, or rather an estuary formed by the Parana and Uruguay rivers. It is 170 miles wide at its mouth. Its waters are very muddy. The length is about 200 miles; with the *Parana* and *Paraguay* it measures about 2,500 miles.

The *Casiquiare* joins the Rio Negro to the Orinoco. After a south-west course of 130 miles it falls into the former.

It is a very rapid stream but this does not prevent boats from passing out of its system into the others. Where it leaves the Orinoco it is 250 feet wide and increases in width till it joins the Rio Negro, with a breadth of 2,500 feet.

The *Paraguay* and *Madeira* rivers have their sources in the same depression. During the rainy season it is possible to pass by boat from the Paraguay into the Madeira or Tapajos, and thence into the Orinoco, as at this season the head waters are united. A boat may thus enter the mouth of the Orinoco and again reappear in the Atlantic through the La Plata.

There are no large rivers on the *western side* of the Andes owing to the short distance to the sea.

The following is a list of the principal rivers of South America:

NAME.	LENGTH.	AREA OF BASIN.	MILES OF NAVIGATION.
Amazon.....	4,000 miles.	2,800,000 square mi.	3,000 miles.
Orinoco.....	1,550 "	340,000 " "	nearly throughout
Rio de la Platta.....	2,500 "	1,250,000 " "	1,250 miles.
San Francisco.....	1,600 "	250,000 " "	900 "
Madeira.....	2,000 "		1,000 "
Magdalena.....	900 "	100,000 " "	300 "
Parana.....	2,000 "		1,000 "
Paraguay.....	1,600 "		1,500 "
Rio Negro.....	1,200 "		1,000 "
Colorado.....	1,000 "		120 "
Tocantins.....	1,000 "	384,000 " "	100 "
Tapajos.....	500 "		300 "
Xingu.....	1,300 "		100 "

SOIL.

17. South America has a larger area of productive soil than any other Grand Division. It is almost every where noted for its *extreme fertility*, which is due mainly to the warm climate and great abundance of rainfall.

The *Southern part* known as Patagonia is *sterile*, as well as the deserts previously mentioned.

CLIMATE.

18. The climate of South America is remarkable. In the low and level parts, near the equator, the temperature is always that of summer. The trees are clothed in perpetual verdure, the flowers are ever in blossom, and fruits ripen at all seasons.

In those parts which are well watered, vegetation becomes exuberant, animals increase, and reptiles and insects are multiplied without end.

Never checked by the return of winter, animals and vegetables go on producing and reproducing, till the whole face of nature seems to be teeming with animal and vegetable life. The exhalations, which arise from the marshy soil and vegetable putrefaction render the air extremely unhealthy.

In the elevated plains, the temperature is cool and delightful.

Throughout the year, the climate has the charms of spring. In many places two crops of wheat and four crops of corn may be reaped in a year. Sowing and planting can be done every day and harvests are always ripening.

West of the Peruvian Andes rain does not fall and thunder and lightning are unknown. Wheat and other grains are piled upon the wharves and left lying there for months without the least protection.

Heavy dews fall here and so render the soil productive. Not a cloud is seen to disturb the serenity of the sky.

A few year ago, for the first time within the memory of man, did the people west of the Andes witness a thunder storm. So great was their fright in

their belief that the world was coming to an end, that they broke open their churches and began to invoke the protection of the Almighty.

On the mountains it is colder: at a height of 15,000 or 16,000 feet, winter establishes perpetual dominion.

Thus, in the same latitude, and within the compass of a few hundred miles, are three distinct zones, each having its own temperature, and its own peculiar classes of trees, plants and animals.

AGRICULTURAL PRODUCTIONS.

19. This continent is remarkable for its vegetation: two-thirds of its surface is said to be covered with forests. Among the native productions are eight species of *palms*, distinguished for their beauty and size, furnishing wines, oil, wax, flour, sugar, and salt; fourteen species of *Peruvian bark*, from which quinine is made, gum guavacum, *Indian-rubber*, cacao, vanilla, maize or Indian corn, the potato, cassava, and two hundred and fifty varieties of wood useful for carpentry and dyeing, coffee, sugar, cotton, indigo, and grains of various kinds are abundantly produced by cultivation.

In the rainless region wherever there is water, it is like a conservatory without glass; the most beautiful flowers and delicious fruits, are produced.

MINERAL PRODUCTIONS.

20. Granite forms the *foundation* of this continent. The *precious metals* are abundant in Peru, Bolivia, Brazil and Chili.

The copper mines of Chili are among the most productive in the world. Brazil furnishes nearly all the *diamonds* of commerce.

Emeralds of the finest quality are found in Columbia and Venezuela. Iron and lead abound in Brazil. Coal and Iron are mined in Chili.

The *mineral resources* of this continent have been but partially explored and the future must yet reveal to the world the extent of its mineral wealth.

COMMERCE.

21. The commerce of South America is already considerable, and is carried on chiefly by foreign nations. The leading *exports* are guano, wool, nitre, copper, Peruvian bark, tin, hides, horns, tallow, cotton, silver, diamonds, beef, Brazil wood, indigo, cattle, tobacco, coffee, rum, dyewood, cocoa, caoutchouc.

The *imports* are machinery, agricultural implements, petroleum, hardware, lard, flour, ice, biscuits, coal, hams, boots, shoes, soap, etc., from the United States; cotton, woolens, and linens

from Great Britain; wines from Portugal, Spain and France. About one-fourth of the exports go to England and one-fifth to the United States. Brazil takes the lead in commerce.

NATURAL ADVANTAGES.

22. (1) The *advantages for agriculture* can not be excelled. The soil and climate are such as to favor the production of almost every thing that grows. With but little labor the soil yields the richest returns.

The *advantages for coast-wise trade* are not so good owing to the almost unbroken shore line. Some of the harbors are very fine; others are obstructed by sand-bars and shoals.

The climate along the coast in many places is so unhealthy that the cities are built from 10 to 25 miles from the coast upon high ground out of the reach of the *miasma*. A few people reside on the harbor who are engaged in loading and unloading vessels and in transporting goods to and from the sea-port. *Lima* is six miles from the coast, *Callao* is its sea-port; *Caracas* is 12 miles distant from the sea, and *La Guayra* is its sea-port.

The advantages for river commerce are the best in the world. More than 20,000 miles of the finest rivers of the globe afford outlets to nearly every part of the continent.

(3) The *advantages for manufacturing* are good. An abundance of raw material, plenty of water power in most parts, the excellent commercial facilities, are the chief inducements to manufacturing. The want of coal seems to be the leading hindrance.

INTERNAL IMPROVEMENTS.

23. There are scarcely any *public roads*. In the countries among the Andes nearly all the merchandize is *carried* on the backs of mules, or Llamas, in narrow paths instead of roads. Travelers are carried from place to place in chairs fastened to the backs of Indians. *Streams* are *crossed* on bridges made of ropes. *Steamboat* navigation is carried on to but a limited extent. A number of short lines of railway have been built. About 5,000 miles in all have been completed and a number of other lines are projected. Many of the larger cities have *public buildings* of merit. *Agriculture* is carried on in a very rude style. In many places *grain is threshed* by making horses and cattle gallop over it. The *anarchy* among the governments and general lethargy of the inhabitants are a *great hindrance* to the spread of useful improvements.

ANIMALS.

24. The most remarkable animals of South America are the tapir, which resembles a hog, with a long flexible snout which it uses like the trunk of an elephant; the ant-eater, which feeds on ants; the llama, resembling the camel; the jaguar, which is like the

African panther; and the condor, a species of vulture, and the largest bird of flight. Besides these there are numerous monkeys, parrots, toucans, alligators, and a great variety of serpents. The birds are noted for their gaudy plumage. Eight species of humming birds are found here from the size of a wren to that of a bumble bee and of such delicate colors that they seem like gems as they flit through the sunshine.

POLITICAL DIVISIONS.

25. The following are the Political Divisions of South America:

NAMES.	AREA.	POPULATION.	GOVERNMENT.	LANGUAGE.	RELIGION.
U.S. of Colum.	500,000	2,800,000	Republic.	Spanish.	Catholic.
Venezuela.	425,000	1,250,000	"	"	"
Guiana	480,000	300,000	Colonial.	Eng., Fr., Dch.	Cath. & Prot.
Brazil.	3,140,000	10,108,000	Empire.	Portuguese.	Catholic.
Paraguay.	70,000	325,000	Republic.	Spanish.	"
Uruguay	75,000	300,000	"	"	"
Chili.	240,000	2,000,000	"	"	"
Argentina.	812,000	2,000,000	"	"	"
Bolivia	575,000	2,000,000	"	"	"
Peru.	600,000	2,500,000	"	"	"
Ecuador.	275,000	1,800,000	"	"	"
(no long'r distinct)					
Patagonia.	350,000	4,000	Belongs	to Chili and	Argentina:
Islands.	100,000	4,000			
Total	7,642,000	24,891,000			

RACES.

26. The greater part of the inhabitants of South America are descendents of the *native Indians*;—some of these are partially civilized, but large tribes still wander in the savage state.

Those who have submitted to the government are a depressed, gentle, ignorant race, bearing a general aspect of sadness. A few have risen to distinction at the bar, and in other professions; but in general, the oppressive influence of the whites keeps them in a state of poverty and depression, scarcely better than slavery.

In Patagonia, the Indians are said to be of a very large size; both men and women are nearly always on horse-back.

Patagonian means large footed, so named by the earliest navigators; their feet being wrapped in skins appear very large, but in truth they have very small hands and feet. The men average in height nearly 6 $\frac{1}{2}$ feet.

The *inhabitants of Tierra del Fuego* are dwarfish, and seem to be the most miserable of the human race. There are many *negroes* and *mestizoes*, especially in Guiana and Brazil. The *ruling people* are the descendants of Europeans, Spaniards and Portuguese; they number about one-third of the whole Population.

OCCUPATION.

27. *Mining* is one of the leading pursuits in the mountain regions, yet many of the mines once so famous are no longer work-

ed. In Brazil and Argentina there are large ranches containing many thousand cattle, which are caught by lassoing them. Some farms have from 40,000 to 60,000 head.

In many places agriculture is despised and people crowd the cities to lead miserable lives in poverty, while all the rich and inviting country round about them is left uncultivated.

Manufacturing is carried on to some extent in Brazil and Chili. Here manufacturing and the arts receive considerable encouragement. *Commerce* is pursued to a very limited extent, by the natives. Nature has done so much for this continent that the great bulk of the population rely almost wholly on the spontaneous productions of the soil for its subsistence.

GOVERNMENT.

28. All the governments of South America, except Brazil and Guiana are republics but a great deal of confusion exists among them. They can hardly be said to be wholly at peace with one another. The result is a very slow development of the resources of these countries. Some of the presidents are elected for life and have nearly the same power as a monarch.

Brazil is an empire, a constitutional monarchy. The emperor Don Pedro II., is one of the best sovereigns of the age and under his reign the country is flourishing and is rapidly rising in development and importance among the nations of the world. Guiana is divided among the English, the Dutch and the French. The English possess the western portion, the Dutch the central and the French the eastern.

EDUCATION.

29. The South America countries are in general very deficient in advantages for education. *Brazil* has a number of schools and a laudable effort is being made for the better education of the people. *Boliva* and *Peru* have each several schools of a high order. But *Chili* takes the lead in educational matters as in almost all other matters. Her school system resembles that of the United States. Many *public* and *private schools* exist. Two *normal* schools are supported by the government for the education of teachers. The northern states, Ecuador, U. S. Columbia and Venezuela, have a few schools of note for the upper classes of society and, in the *cities*, limited provisions are made for the education of the youth.

Although the great mass of the inhabitants of South America are very degraded and ignorant, it is a pleasure to say that of late active measures have been taken in nearly all the countries to afford better means of diffusing knowledge and of raising the standard of intelligence.

RELIGION.

30. As has been shown the established religions of all the countries except British and Dutch Guiana, is *Roman Catholic*, but all other creeds are tolerated. Among the Indians and half-breeds, in some places, the religion is much corrupted by the intermixture of *pagan rites* and *superstitions*. The people in general are not noted for their morality and christianity.

CITIES.

31. *Rio Janeiro*, the largest and most important city of South America, on one of the noblest harbors in the world, is beautifully situated on a bay of its own name. Its harbor is 17 miles long and 11 miles in extreme width, with an entrance $1\frac{1}{2}$ miles wide. It contains many churches and other public buildings of note. *Bahia* is situated on the eastern coast of Brazil on one of the finest bays in South America. It contains more churches, convents and monasteries than any other city of the empire. *Buenos Ayres* is the chief city and capitol of Argentina on the La Plata river. Its harbor is very defective

Large vessels drawing 12 feet of water cannot come nearer than 5 or 6 miles. Freight and passengers must be carried to and from the harbor in flat boats.

The city is regularly laid out with wide streets. Nearly all the houses are made of brick and painted white; nearly every house has a garden attached and many have balconies with lattice work containing shrubs and flowers.

Montevideo is situated on a fine bay on the same river. It has extensive commerce, exporting hides, beef, feathers, Chilian copper and Paraguay tea. *Caracas* in the northern part of Venezuela, 12 miles from the sea, has a pleasant and healthful climate but has several times suffered severely from earthquakes. In 1812 it was almost entirely destroyed and 12,000 of its inhabitants perished.

Lima, the capital of Peru, is one of the most enterprising cities of South America.

It contains manufactories of gold lace, fringes, glass, chocolate, paper, etc., a fine library of 20,000 volumes, a museum and a number of educational institutions.

Bogota, the capital of U. S. Columbia, is situated on a lofty plateau 8,000 feet above the sea level. It is surrounded by lofty mountains and enjoys a climate which is perpetual spring.

Owing to its isolated situation it has little commerce. The houses are very low and strongly built. In nearly all the large cities of South America there are street railways, but here not a vehicle is to be seen and the traffic is carried on in the streets by mules. It manufactures soap, cloth, and leather.

Quito, the capital of Ecuador, has repeatedly suffered from earthquakes.

It is situated under the equator on the side of Mount Pichincha, 9,500 feet above the sea level and eleven snow capped peaks are in sight. It contains some fine squares.

La Paz, the capital of Bolivia, is nearly 12,000 feet above the sea level. It is the most important city of its own country.

Santiago, the capital of Chili, is an important place. The houses are nearly all one story with thick walls. *Earthquakes* are common. It is well laid out with fine promenades. *Sucre*, formerly the capital of Bolivia, is a cleanly city situated on a lofty table land, nearly 10,000 feet above the sea level.

Assumption, the capital of Paraguay, is situated on the left bank of the Paraguay river, nearly 1,000 miles from its mouth.

It is a neat and cleanly city, founded by the Spaniards in 1535, and from its advantageous position, in a few years became a city of importance. Hides, tobacco, cedar, and mandica are the chief articles of trade.

Potosi, of Bolivia is noted for its rich silver mines, though not so productive as formerly owing to a want of proper machinery for working the mines.

Pasco, of Peru, nearly 14,000 feet above the sea level, is the highest city of the globe, and is surrounded by rich silver mines. *Popayan* is the oldest city in S. A. founded by Europeans.

CITIES.	POPULATION.	CITIES.	POPULATION.
Guayaquil.....	22,000	Maracaybo.....	22,000
Rio Janeiro..	275,000	Bogota.....	50,000
Bahia.....	129,000	Caracas.....	49,000
Sucre	24,000	Georgetown.....	37,000
La Paz.....	76,000	Paramaribo.....	22,000
Potosi.....	26,000	Cayenne	10,000
Buenos Ayres	200,000	Quito	70,000
Santiago.....	150,000	Lima.....	100,000
Montevideo..	91,000	Cuzco..	50,000
Assumption.....	30,000	Pernambuco..	117,000

HISTORY.

South America was discovered by Christopher Columbus in his third voyage to America in 1492. He *landed* at the mouth of the Orinoco river,

The following year some Spanish explorers visited the northern shores, among whom was one named Amerigo *Vespuci*, (A-mao-re-go Ves-poot-she) who published an account of the voyage, in 1500, and gave his name to the whole country. It was not known at the time that America was a continent until in 1513 *Balboa*, a Spaniard, crossed the isthmus of Darien and first saw the Pacific Ocean. The waters were called Pacific from their tranquil character but it was afterwards found to be subject to violent storms. ,

In 1520 *Magellan* passed through the strait which bears his name and visited some of the Pacific shores. His fleet was the first to circumnavigate the globe.

Nearly the whole of South America for three centuries, was divided between *Spain* and *Portugal*. The Spaniards, on the discovery of South America, found it in the possession of various tribes of *Indians*, generally of a more gentle and less warlike disposition than those who inhabited North America. They were evidently of the same race, but they were influenced by the softer climate, and their vigor and courage had become subdued. With the cross in one hand and the sword in the other, the ruthless invaders took possession of the land. Peru, a populous empire of partly civilized people, was conquered by *Pizarro*, in 1535, by a series of treacherous though intrepid acts, scarcely paralled in the history of mankind.

The whole peninsula of South America fell into the power of European governments. Spain took possession of the greater part and Portugal of a large tract on the east. For three centuries the country remained in the possession of these two powers with the exception of Guiana. Finally the colonies taking advantage of the disturbed condition of the mother country obtained their independence between the years 1819 and 1829. *War* and *internal dissensions* have retarded their growth, but a marked change is taking place for the better.

BRAZIL.

MAP EXERCISES.

CAPES.—Orange, St. Roque, St. Thome, Frio.

GULFS AND BAYS.—All Saints, Formosa.

ISLANDS.—Marajo, St. Catharine, Bananal.

MOUNTAIN RANGES.—Organ, Sierra De Mar, Sra de Espinhaco, Sra Mantiqueira, Geral, Pireneos, Acaraí, Parime.

MOUNTAIN PEAKS.—Itatiaya, Itacalumi, Itambe.

RIVERS.—Amazon, Para, Tocantins, Xingu, Tapajos, Madeira, Purus, Japura, Rio Negro, Branco, Paranahyba, San Francisco, Parana, Paraguay, Uruguay, Guapore.

CITIES.—Rio Janeiro, Bahia, Pernambuco, Maranhão, Miranda, Villa Bella, Para, Natal, Santarém, Obidos, Diamantina.

RELATIVE POSITION.—In what direction is Rio Janeiro from Para? from Obidos? Diamantina? Bahia? New York?

TRAVELS.—Trace a water route from Rio Janeiro to Santarém; to Buenos Ayres; Vera Cruz; Cincinnati.

MISCELLANEOUS.—What is the difference of time between Rio Janeiro and New York? In what direction would your shadow fall to-day at Bahia? State the latitude and longitude of the three largest cities of Brazil. What isotherms cross Brazil?

What is the difference of time between the extreme eastern and western points of Brazil? By the scale of miles what is the distance from Para to Bahia? to Montevideo? to the boundary of Bolivia? to the mouth of the Madeira? How many parallels cross Brazil? How many meridians?

DESCRIPTION.

POSITION.

1. Brazil embraces the largest contiguous area of any country in the world, except Russia. It is bounded on the east and south by the Atlantic ocean, and on the other sides by every country of South America, Chili being excepted.

LATITUDE AND LONGITUDE.

2. It extends in latitude from 4° 30 min. north to 33° south, and in longitude from 35° to 73° west.

EXTENT.

3. Brazil occupies nearly one-half of South America. Its greatest length is 2,600 miles; greatest breadth 2,470. Area 3,140,000 square miles.

COAST.

4. The *coast line* of Brazil measures nearly 3,800 miles: it is not deeply indented by gulfs and bays but is very irregular. Many of its harbors rank among the finest in the world.

ISLANDS.

5. The only island of importance is *Marajo*, noted for its productions of rice and cattle. A few smaller islands exist along the coast.

SURFACE.

6. The eastern and south-eastern parts are hilly and mountainous. The most easterly range is the *Sierra de Mar* or *Brazilian Andes*. The highest peak is 4,160 feet. Further west lies the *Sra de Espinhaco*. Its loftiest is Itacolumi, 6,175 feet high. The *Geral* are on the west. Many ranges as shown on the map, are mere flat watersheds.

PLAINS.

7. The interior consists of extensive plains, the most remarkable of which is the *Selvas of the Amazon*. It is covered with a luxuriant and gigantic vegetation to which the hot and humid climate gives an astonishing vigor.

The immense and impenetrable forests and mighty streams of this great plain swarm with animal life in all its forms. Ferocious beasts of prey, huge serpents, alligators, troops of monkeys, flocks of gaudy colored and loquacious birds, and clouds of insects, are here yet undisturbed by the arts of man. The country is characterized by frequent thunder storms and torrents of rain, which occur in the morning after cloudless nights.

OBJECTS OF INTEREST.

8. Though this country does not abound in lofty water-falls, gigantic caves, and magnificent mountain scenery, as some of the other parts of the world, yet it is not lacking in objects of interest. To the stranger, the *mammoth forests*, the remarkable vegetation, the profuse and beautiful flowers and birds, the mighty Amazon, are sources of ceaseless wonder. In the valley of the upper San Francisco are vast *limestone caverns*, containing many bones of extinct animals such as the megatherium, and mastodon.

RIVERS.

9. The mightiest river on the globe, the *Amazon*, drains the greater portion of Brazil.

A river of such prodigious size that near its mouth you may sail on it and be out of sight of land, and a thousand miles above the mouth when on the middle of the stream the trees on the banks are just on the edges of the horizon.

The principal tributaries on the north are the *Rio Negro*, *Tapura*, and *Putumayo*. On the south are the *Tocantins*, *Tapajós*, *Xingu*, *Madeira*, *Purus* and *Jurua*, which in themselves rank with the largest rivers of the world. The *San Francisco* and the *Paranahyba* empty into the Atlantic, and are valuable for their commercial importance.

The learner will observe that Brazil is one of the finest watered portions of the globe.

LAKES.

10. There are many *small lakes* in the south, the largest of which are *Patos* and *Mirim* along the coast. They are really branches of the Atlantic. The former is 140 miles long and 40 wide; the latter, 100 miles long and 30 wide.

SOIL.

11. In the west near the Geral Mountains, are the Campos Parexis, forming a sandy and barren *desert*. The larger part of the rest of Brazil is fertile. Along the rivers are some of the *richest lands* in the world.

CLIMATE.

12. In the *northern parts* and in the valley of the Amazon, the climate is *hot* and *moist*, but the heat is tempered by the great expanse of forests, and by the trade winds. Toward the *south* it is *temperate* and healthy, and throughout the whole country the climate may be described as highly agreeable and genial. In the valley of the Amazon the rainy season begins in December and lasts 6 months. The *temperature* varies but little here during the year, the average being 81 degrees.

VEGETATION.

13. Enjoying a favorable climate and a fertile soil, this country produces a great variety and abundance of plants. The forests yield valuable woods for dyeing and building. All kinds of tropical produce, sugar, coffee, cotton, etc., are found in the warmer regions, while other districts abound in the cereal grains, and fruits of the temperate zones. Of coffee it furnishes three-fourths of all used in the world.

The milk-tree, caoutchouc, or India rubber-tree, manioc, mate, logwood, mahogany, ipecac. sassafras, and numerous useful woods are among the products. Besides these there are many varieties of fruits, both tropical and those peculiar to the temperate zones.

MINERALS.

14. *Gold* is obtained both from the mines and from the washings in various places.

Iron abounds in nearly all the provinces, and copper and salt are common.

Brazil supplies nearly all the *diamonds* of commerce.

Other minerals are emeralds, rubies, topazes, silver, lead, coal, mercury, and sulphur.

MANUFACTURES.

15. The manufactures are not extensive. However, recently there is quite a movement in this direction and there are already many factories and foundries. The chief articles are hats, rum, cotton goods, soap, machinery, engines, farming implements, jewelry and leather.

COMMERCE.

16. Brazilian commerce is *flourishing*; there are many lines of steam-ships enjoying a liberal subsidy from the state.

The *exports*, coffee, hides, sugar, tobacco, cotton, diamonds, dyewoods, etc., in 1880 aggregated over \$102,000,000; the *imports* \$82,000,000; these were cottons, woolens, linens, jute, steam engines,

rails, machinery, hardware, cutlery, etc. The trade with the United States is large.

INTERNAL IMPROVEMENTS.

17. The *roads* of Brazil are wretched, but there are twenty lines of railroad aggregating 1,900 miles, extended by public and private means.

In 1874 a *submarine cable* was completed to Europe.

Bridges are hardly known.

But under the present wise administration there is great encouragement toward internal improvements of all kinds.

ANIMALS.

18. The wild animals comprise the jaguar, puma, and other cat species, the tapir, peccary, alligators, poisonous and monstrous serpents, troops of monkeys, parrots, macaws, toucans, curassous, humming birds, etc. The plains abound in wild cattle.

About 2,000 species of fish are found in the Amazon river.

INHABITANTS.

19. A large portion of the country has never been fully explored, and is occupied by savage tribes of independent Indians.

The *negroes* who form a large part of the population were originally imported from Africa and are being emancipated from slavery. In 1871 a law was enacted that every child born of slave parents after that date, should be free.

The *whites* number one-third of the whole population: there are besides many of the *mixed races*. In many places large German settlements, as well as those of other nationalities, have been made.

The *Brazilians* are cheerful, good-humored, and intelligent, and we are glad to say that their social condition is fast improving. The whole population is 10,108,000.

OCCUPATION.

20. Agriculture is the chief employment. The raising of cattle, horses, and mules, upon the great plains, is the chief object of the farmer there. Some of the farms contain from 40,000 to 60,000 head of cattle.

Commerce and mining furnishes employment to many. Of late considerable attention is being paid to manufacturing.

LANGUAGE.

21. The civilized portion of the population generally speak the *Portuguese* language; but many *Germans*, *Italians*, etc. have settled in various places, who speak their native tongues.

GOVERNMENT.

22. Brazil is a limited monarchy. Don Pedro II. is emperor.

"The *executive power* is vested in the emperor, and his ministers and secretaries of state. The empire is divided into twenty provinces, comprising 642 municipalities, each having a council chosen directly by citizens possessed of an annual income of \$112."

The *legislative power* is vested in a senate of 58 member elected for life, and a chamber of deputies, 122 members, chosen for four years.

A property qualification is necessary to a right of suffrage.

EDUCATION.

23. *Free public* schools are supported by the state and in some of the provinces education is compulsory.

About 500 *newspapers* are published. However, there is still much ignorance among the people.

RELIGION.

24. The Roman Catholic religion is established by law, all other creeds are tolerated, but must be practiced in private.

Dissenters enjoy all the civil rights, except an election to the general assembly.

CHIEF TOWNS.

25. *Rio Janeiro* and *Bahia* have already been described.

Pernambuco or Recife ("reef") is situated on the Atlantic coast. The harbor is protected by a reef of rocks, and the port is defended by four forts.

Maranham, on the north-eastern coast is well laid out, with paved streets. The harbor is fine and the commerce considerable.

Para, another seaport of Brazil, on the Para river, 70 miles from the Atlantic. It contains a number of public buildings. Its trade which is important is carried on with Great Britain and the United States.

The following is a list of the principal towns of Brazil together with their population:

Rio Janeiro.....	275,000	Maranham.....	32,000
Bahia.....	129,000	Obidos.....	2,000
Pernambuco.....	117,000	Santarem.....	1,500
Para.....	35,000	Diamantina.....	10,000

HISTORY.

26. Pinzon, one of the companions of Columbus, first saw the coast of Brazil, north of the Amazon, in 1499; but the chief discovery was made by the

Portuguese, under Cabot, who, while on a voyage to the east Indies, accidentally came in sight of the southern coast, May 3, 1500. No gold was at first discovered here, and the most valuable exports consisted of dyewood, from which the name of *Brazil* was given to the country.

In 1690, mines of gold were discovered, and diamonds shortly after. These discoveries raised the country to the level of the richest Spanish possessions in America, and made it the most important source of revenue to the crown of Portugal. When the French invaded Portugal in 1807, the royal family escaped to Brazil, where they continued to dwell after the expulsion of the invaders.

On the overthrow of Napoleon, Brazil was raised from the rank of colony, to that of a kingdom.

The inhabitants of Portugal testified their discontent at this change, and compelled the king to return to Lisbon in 1821, leaving his son, Don Pedro, as regent of Brazil. The Brazilians were now resolved to throw off all connection with the mother country. Accordingly, on the 12th of October, 1822, declared themselves independent, and conferred the crown on Don Pedro with the title of Emperor of Brazil.

The king finding resistance unavailing formally resigned his claim to the government of Brazil in 1825. Under this government the country has generally been tranquil and prosperous.

EUROPE.

MAP EXERCISES.

Locate the following:

ISLANDS.—Nova Zembla, Loffoden Isles, Zealand, Funen, Rugen, Oeland, Gothland, Aland, Channel Isles, Balearic Isles, Ivica, Majorca, Minorca, Corsica, Sardinia, Lipari, Sicily, Ionian Isles, Corfu, Candia, Great Britain, Ireland, Shetland Isles, Orkney Isles, Hebrides Isles, Elba, Scio, Cyprus, Eubœa, Cyclades.

CAPES.—Kanin, North, The Nazé, Ortegal, Finisterre, St. Vincent, Passaro, Matapan, Land's End, Wrath, Clear, Creux, Nao, de Gata, Duncansby Hd., Salamone, Corso, Spartivento, Gallo, Malia, Spada.

PENINSULAS.—Norway and Sweden or Scandinavian, Jutland, Iberia, Italy, Morea, Crimea, Kanin, Kola.

MOUNTAIN RANGES.—Sra, Guadarama, Timan Hills, Bohemian, Forest, Schar Daugh, Rhadope, Kiolen, Dovrefield, Valdai Hills, Ural, Caucasus, Carpathian, Balkan, Pindus, Alps, Sudetic, Hartz, Jura, Apennine, Cevennes, Cote d'Or, Vosges,

Pyrenees, Cantabrian, Sierra Morena, Sierra Nevada, Dinaric, Alps.

MOUNTAIN PEAKS.—Olympus, Parnassus, Polino, Blanc. Cenis, St. Gothard, Etna, Stromboli, Vesuvius, Rotondo, Gennargentu, Perdu, Maladetta, Snechatten, Sulitelma, Sabija. Kilhorn, Gaustafeld. Gran Sasso.

GULFS, BAYS AND SEAS.—Waranger, Hardanger, Sogne Fjord, Policastro, Tcheskaya, White, Bothnia, Finland, Baltic, Riga, Dantzic, North, Zuyder Sea, Biscay, Lyons, Genoa, Venice, Naples, Taranto, Adriatic, Lepanto, Salonica, Archipelago, Marmora, Black, Azof, Caspian, Mediterranean, The Wash, Murray, Dornoch, Irish.

STRAITS AND CHANNELS.—Skager Rack, Cattegat, Gibraltar, Bonifacio, Messina, Otranto, Dardanelles, Bosphorus, Dover, English, St. George's, Bristol, North, The Sound, Kertch.

LALES.—Wener, Wetter. Constance. Onega, Ladoga, Zurich, Maclar, Erne, Como, Garda, Peipus, Ilmen, Maggiore, Kutno, Corib, Stor.

RIVERS.—Klar, Dahl, Tornea, Onega, Dwina, Mezene, Petchora, Ural, Volga, Kama, Don, Dnieper, Dniester, Danube, Pruth, Theiss, Neva, Drave, Save, Po, Tiber, Rhone, Ebro, Guallquivir, Tagus, Marne, Meuse, Scheldt, Rhine, Weser, Elbe, Oder, Wartha, Vistula, Niemen, Thames, Shannon, Glomen, Sereth, March, Minho, Maas, Spree, Bug, Maritza, Vardar, Isar, Drin, Aar, Guadalaviar, Guadiana, Dordogne.

CITIES AND TOWNS.—Ghristiania, Bergen, Hammerfest, Stockholm, Gottenburg, Copenhagen, Elsinore, Madrid, Valladolid, Cordova, Gibraltar, Barcelona, Saragossa, Lisbon, Oporto, St. Petersburg, Moscow, Odessa, Sebastopol, The Hague, Amsterdam, Brussels, Antwerp, Ghent, Paris, Calais, Havre, Nantes, Marseilles, Lyon's, Bordeaux, Strasburg, Ajaccio, Bremen, Hamburg, Lubeck, Berlin, Konigsberg, Dantzic, Breslau, Magdeburg, Cologne, Aix-la-Chapelle, Hanover, Frankfort-on-the-Main, Dresden, Stutgard, Munich, Berne, Geneva, Vienna, Prague, Buda Pesth, Rome, Turin, Milan, Genoa, Florence, Pisa, San Marino, Naples, Venice, Cagliari, Palermo, Constantinople, Adrianople, Bucharest, Seville, Salonica, Athens, Corinth, Thebes, Navarino, Candia, Corfu, London, Birmingham, Sheffield, Leeds, Manchester, Liverpool, Edinburgh, Glasgow, Dublin, Cork, Belfast, Tours, Orleans, Syracuse, Belgrade, Lemberg, Trieste, CITTINJE, Valencia, Malaga, Toulon, Newcastle, Klausenberg, Brunn, Leghorn, Niznei Novgorod.

MINOR DIVISIONS.—Andora, Bulgaria, Slavonia, Dalmatia, Montenegro, Servia, Bosnia, Roumania, Wallachia, Rumelia, Albania, Transylvania, Hungary, Bohemia, Moravia, San Mar-

ino Republic, Poland, Pommerania, Holstein, Sleswick, Hanover, Bavaria, Saxony, Silesia, Wurtemberg, Baden, Alsace, Prussia.

RELATIVE POSITION.—In what direction is London from Rome? from Paris? Berlin? Lisbon? St. Petersburg? In what direction is Berlin from Rome? from Moscow? Astrachan? Constantinople? Liverpool? Vienna? The Hague? Copenhagen? In what direction is the North Sea from the Baltic Sea? from the Marmora? the Gulf of Lyons? Gulf of Riga? Bay of Biscay?

TRAVELS.—What countries would you cross in traveling by land from Portugal to Greece? to Denmark? to Russia? to Sebastopol? to Norway? from Norway to Turkey? to Italy? to Belgium? Trace a water route from London to Copenhagen; to St. Petersburg; to Edinburg; to Dublin; to Lisbon; to Marseilles; to Rome; to Athens; to Trieste; to Constantinople; to Sebastopol. A water route from Bremen to Liverpool; to Stockholm; to Lyons; to Venice; to Calcutta; to Sidney; to to Yeddo; to New York; to Quebec.

MISCELLANEOUS.—What capitals of Europe have nearly the same latitude as Columbus, Ohio? What cities are on or near the 60° north latitude? the 52° ? What countries are crossed by these same parallels? What countries are crossed by the prime meridian? 10° east? 20° east? Give the latitude of all the capitals of Europe. Give the longitude of the same. What is the difference of time between London and Paris? Berlin? St. Petersburg? Calcutta? Pekin? Washington? What time of day is it at Berlin when it is 7 o'clock a. m. at New York? What time of day is it in Paris when it is 1 o'clock a. m. in San Francisco? What is the length of the longest day at St. Petersburg? at Rome? at Paris? Where did the sun set to-day when it rose at London? Where, when it was noon at London?

DESCRIPTION.

GENERAL STATEMENT.

1. Europe, the least but one of the six Grand Divisions of the globe, surpasses them all in wealth, intelligence, and general civilization.

LOCATION.

2. (1) Europe is bounded on the north by the Arctic ocean, on the east by Asia, on the south by Asia and the Mediterranean sea, and on the west by the Atlantic.

(2) It lies between the parallels 36° and 71° north, and 10° west longitude and 65° east longitude.

EXTENT.

3. Its greatest length is 3,400 miles, and greatest breadth 2,400 miles. Area 3,825,000 miles.

Distance from Paris to London	225 m.	Dis. from Amsterdam to Lond.	240 m.
" " Vienna	600 "	" " Copenhagen	600 "
" " Rome	800 "	" " St. Petersburg	1,140 "
" " Madrid	700 "	" " New York	3,500 "
" " Athens	1,500 "	" " Dublin	300 "
" " Constan'op.	1,700 "	" " Iceland	1,050 "
" " Berne	650 "		

Let the pupil find, by the scale of miles, the distance between the following places:

Rome to Madrid.
 " " Paris.
 " " Berlin.

Rome to Moscow.
 " " North Cape.
 " " Astrachan.

GENERAL OUTLINE OF THE COAST.

4. The main body of land viewed on the map has nearly the form of a right-angled triangle. Europe is so much indented by large bodies of water that few parts are more than 300 miles from the sea. The shoreline measures more than 20,000 miles, or one mile of coast to every 189 square miles of surface.

Within the English Channel, at St. Malo on the coast of France, the tide rises to a height of 50 feet, next to Fundy the highest known.

CAPES.

5. The most northerly extremity is North Cape.

Cape Skagen or *Skan*, the northern extremity of Jutland, gives name to the Skager Rack. Matapan projects from the southern part of Greece into the Mediterranean; it is the southernmost point in Europe. Land's End, Cape Clear, with Duncansby Head are the most noted capes of the British Isles. Other important capes on the continent are *St. Vincent*, *Ortegal*, *Finisterre*, *Spartivento*, *The Naze*, etc.

GULFS AND BAYS.

6. Among the most important gulfs and bays of Europe are the Gulf of Bothnia, the northern projection of the Baltic sea, the Bay of Biscay, the Gulf of Lyons, Bay of Naples, etc. The Gulf of Bothnia is 400 miles long with an average width of 100 miles.

SEAS.

7. The *Mediterranean* is the largest inland sea, being 2,000 miles long, 200 to 800 miles wide with an area of 1,000,000 square miles.

At the Strait of Gibraltar, a strong central current brings the waters of the Atlantic into it, while two lateral currents pour them back into the sea. The evaporation of the Mediterranean exceeds the amount which the rivers bring into it; hence it is kept full by a stream from the Atlantic, while its waters are about three times as salt as those of the latter.

The *Adriatic*, an arm of the Mediterranean lies between Italy on the west and Turkey and Austria on the east. The western shores are low and marshy while the eastern are high and rocky. Navigation is safe during the summer, but during the winter dangerous on account of the south-easterly winds; it is 500 miles long and 100 wide, area 45,000 square miles.

SEAS.	L'TH	B'TH	AREA.	REMARKS.
Black	700	380	168,500	Drainage area is 640,000 sq. mi. It is about one-half as salt as the ocean. Receives $\frac{1}{3}$ of the running water of Europe and is subject to great storms.
Marmora Marble	160	50	6,000	It derived its name from a small island toward its western extremity celebrated for its marble quarries.
Azof	200	80	14,000	Perhaps the most noted sea in the world in abundance of fish. North coast bold and craggy; East coast very low.
Archipelego.	400	200	60,000	It contains numerous islands some of which have valuable marble.
North	700	420	250,000	Average depth 186 feet.
Baltic	900	180	160,000	It drains more than one-fifth of Europe or 900,000 square miles.
Irish.	150	125	10,000	The scene of an active trade.
Zuyder.	45	35	1,200	Its waters are now being pumped into the sea.
White	380	30 to 150	45,000	Deep and navigable for large vessels. At the mouth of the Dnieper there are large sand-banks.

CHANNELS, STRAITS, ETC.

8. The *Strait of Dover* separates England from France, and connects the North Sea to the English Channel. (The pupil should be required to locate other straits, etc. in the same way.)

STRAITS, ETC.	LENGTH	WIDTH.
Dover		21
Skager Rack	150	90
Categat.	100	10
English	300	20 to 155
Gibraltar.		15
Bosporus	17	$\frac{1}{2}$ to $1\frac{1}{4}$
Dardanelles.	40	1 to 4
Enikale, or Kerteh	20	8 to 10
Bonifacio		7
Otranto.	80	60
Messina	20	2 to 11

ISLANDS.

9. Among the islands are the groups of *Nova Zembla* and *Spitzbergen*, in the Arctic Ocean, both claimed by Russia.

They are cold, barren, and desolate, entirely uninhabited, except there is a small Russian hunting post on the latter. They are visited in summer for the purpose of taking whales, walruses, and seals, which abound along the coast. Subterranean labyrinths of great antiquity have been discovered in Nova Zembla.

The other principal islands are noticed in the following table.

ISLANDS.	LENGTH.	BREADTH.	AREA.	POPULATION.
Great Britain	608	300	88,000	29,141,000
Ireland	300	170	33,000	5,364,000
Sicily	185	120	10,000	2,584,000
Sardinia	152	66	9,200	575,000
Corsica	110	53	3,360	263,000
Candia or Crete	150	5 to 35	4,300	200,000
Cyprus	148	49	3,680	130,000
Euboea	115	33	1,460	80,000
Zealand	81	66	2,800	637,000
Gothland			1,277	55,000
Malta	17	9	133	32,000

PENINSULAS.

10. Europe is much indented by arms of the sea, which form numerous peninsulas.

The *Scandinavian peninsula*, comprising Norway, Sweden, and Lapland, is the largest; the isthmus, between the Gulf of Bothnia and the White Sea, is less than 200 miles across.

The *Peninsula of Jutland* is much smaller. In the south, is the *Spanish or Iberian peninsula*, (consisting of Spain and Portugal) with an isthmus 220 miles across.

Italy, the *Morca* joined to the continent by the narrow isthmus of Corinth, 20 miles long and 4 to 8 mile wide, and the *Crimea* extending into the Black Sea, are the most remarkable peninsulas; the latter is joined to Russia by the isthmus of Perekop 20 miles long and 4 wide.

GENERAL CHARACTERISTICS OF THE SURFACE.

11. Eastern Europe from the Arctic Ocean to the Caspian and Black Seas is a low plain, the Valdai Hills, the highest part, being not more than 1,100 feet above sea-level. The northern part of Germany along the Baltic is low and marshy, nearly $1\frac{1}{2}$ million acres being unfit for cultivation. The western part of Austria is flat as well as Holland; much of the surface of the latter is below the sea-level and dykes are built to keep the waters of the sea out.

During the year 1812 the dykes gave way, seventy-two villages were submerged, 100,000 people drowned, and the area of the Zuyder Sea much increased.

The rest of Europe is in general high and hilly or mountainous. The central part of Spain consists of an elevated plateau on an average 2,300 feet high. The plateau of Auvergne is in southern France.

MOUNTAIN RANGES.

12. Four great systems of mountains spread their numerous branches over this continent.

The *Pyrenees* separate France and Spain, and extend in several parallel chains through the peninsula.

The *Alps* are the principal trunk of the second great European system of mountains, whose branches stretch into France, Germany, Italy, Hungary, Turkey, and Greece. The *Juras*, the *Jura*, and the *Cevennes* in France are its western spurs. The highest mountains are in Switzerland.

A *third mountainous system* is the Carpathian, which nearly surrounds Hungary, and extends along the frontiers of Moldavia, sending off several low ranges into Germany.

The *fourth system* of mountains is the Scandinavian which traverses the peninsula of Norway and Sweden, and nowhere exceeds an elevation of 8,500 feet. The following are the principal elevations:

Alps.....	15,700 feet.	Balkan.....	10,000 feet.
Pyrenees.....	11,500 "	Pindus.....	7,700 "
Apennines.....	9,500 "	Carpathian.....	10,000 "
Jura	5,500 "	Cantabrian .. .	10,000 "

MOUNTAIN PEAKS.

13. The following are the principal peaks with their height:

Elburus.....	17,770.	the highest of the Caucasus Mountains
Mont Blanc.....	15,668.	" " " " Alps "
Mulhacén.....	11,670.	" " " " Sierra Nevada "
Maledetta.....	11,468.	" " " " Pyrenees "
Corno.....	10,150.	" " " " Apennines "
Scardus.....	10,000.	" " " " Balkan "
Ruska Poyana .. .	9,910.	" " " " Carpathian "
Skagostolstind .. .	8,670.	" " " " Kiolen "
Parnassus.....	8,000.	Greece.
Sneehatten.....	7,560.	Norway.
Etna.....	10,768.	(Sicily) Active Volcano.
Vesuvius.....	8,480.	(Italy) " "
Cenis.....	11,700	

Stromboli, 2,500 feet high is a volcano constantly in a state of eruption, its fires can be seen at a great distance at sea and is, for this reason, called the "Light-house of the Mediterranean."

NATURAL CURIOSITIES.

14. There are numerous *caverns*, *waterfalls*, mineral springs, glaciers, and other objects of interest in different parts of Europe.

The scenery of *Switzerland* is among the finest in the world.

The *lakes* and mountain sceneries of northern Italy are particularly fascinating.

The *Rhine* abounds in objects and places of romantic beauty.

The mountains and glens of Spain are much admired for their wildness and sublimity.

The numerous cataracts, lakes, rugged mountains of the *Scandinavian Peninsula* make it an interesting country to tourists.

Kilhorn peak situated in the northern part of Norway, has a large perforation, at about three-fourths of its height, through which the sun shines twice each day during the summer, once at noon and then again at midnight; the effect is extraordinary.

LAKES.

15. There are *two great lake regions* in Europe; one embracing the lakes of Switzerland and Italy and the other the thousands of lakes of north-western Russia and Sweden. The lakes of the first region are noted for their beauty, being set like *gems* amidst the mountains.

The *lakes of Norway* are noted as being the most transparent in the world. It is said that pebbles may be seen at a depth of 120 ft.

The following is a list of the principal lakes:

LAKES.	LENGTH.	BREADTH.	AREA.	REMARKS.
Como.....	35	5		Subject to violent storms. Shores lined with beautiful villas.
Maggiore..	40	2	75	300 feet deep; several beautiful villages.
Gorda.....	35	2 to 10		951 feet deep, and abounds in fish.
Wener....	94	15 to 50	2,120	Receives 30 rivers.
Wetter....	80	10		Useful in navigation.
Maelar....	70	2 to 25		Contains 1,300 islands.
Onega.....	140	30 to 45	3,400	Its waters are beautifully clear.
Ladoga....			6,190	Receives 60 rivers.
Zurich.....	23	½ to 2½		Celebrated for its picturesque beauty.
	40			Subject to sudden risings from an unknown cause.
Constance	45	9	200	984 feet deep and is subject to sudden risings from 1 to 4 feet lasting 25 minutes.
Geneva....		1 to 9½	82	Scenery less beautiful than the other lakes of Switzerland.
Neufchatel	24	4	96	1,380 feet above sea level and 300 feet deep.
Lucerne...	24	½ to 2		Scenery is very picturesque. Fisheries supply St. Petersburg in winter.
Peipus.....	80	32		

RIVERS.

16. The rivers of Europe are important. The rivers of western Europe rise chiefly in the Alps while those of eastern Europe rise about the Valdai Hills.

The *Volga* is the largest river, but its navigation is interrupted by sand-beaches. It empties into the Caspian Sea through seventy mouths and changes its channel frequently.

The *Danube* rises in the Black Forest mountains of Germany, flows in a general direction south-east and empties into the Black Sea by five principal mouths. It receives 100 navigable tributaries and is navigable to Ulm, Bavaria.

The *Po* River of northern Italy is a sluggish stream; in its lower course its waters are kept in by *levees* and the channel has become so elevated that the surface of the river is as high as the tops of the houses.

The *Rhine* contains the noted *Falls Schaffhausen*, 100 feet high; it contains other lesser falls and is remarkable for the number of *old castles* upon its banks built during the *Federal Ages*.

There is a beautiful cataract of 112 feet high called *Trolhatta* on the Gotha in south Sweden.

The following are the principal rivers of Europe:

RIVERS	LENGTH.	AREA OF BASIN	MILES OF NAVIGATION, ETC.
Volga...	2,500	400,000	It has 70 mouths and the navigation is obstructed by sand-bars.
Danube ..	2,000	270,000	To Ulm of Bavaria. 1,000 sq. mi. of delta
Po	460	55,000	280, lower course protected by dikes
Rhone	650	46,000	360. Navigation difficult
Rhine	960	86,000	To the falls of Schaffhausen.
Seine	500	35,000	350. Banks highly picturesque
Thames.	215	6,160	To London (60 mi.) for large ships
Elbe	740	60,000	To Prague, navigation difficult
Oder	550	37,000	To Breslau for barges of 50 tons.
Vistula	600	75,000	550 to Cracow.
Dwina.	400	140,000	400 Its whole length.
Dnna	600	65,000	Navigable nearly throughout.
Don	1,325	170,000	500, to Zadonsk, difficult.
Dnieper	1,230	212,000	To Smolensk for flat bottomed boats.
Ebro	480	33,000	Navigable difficult because of rapidity & rocks.
Loire	645	53,000	450, to Roanne, for half the year.
Tagus	545	40,000	To Abrantes, about 100 miles; an impetuous stream.
Tiber.	210	6,000	30 to 90; a sluggish and muddy stream.
Shannon.....	221	8,000	Navigable nearly throughout.
Petchora	300	65,000	Its estuary contains numerous islands.

SOIL.

17. The soil of Europe is various, but in general is *not fertile*. Industrious and skillful cultivation, however, has made it the most productive portion of the globe. Many of the numerous river valleys are highly productive. The extreme northern parts are sterile because of the excessive cold. The south-eastern part of Russia is almost a desert.

CLIMATE.

18. In general, the climate of southern Europe may be described as mild, and that of the North severe, with long and cold winters, and hot, but short summers.

The climate of *Western Europe* is about 10 degrees warmer than that of America in the same latitude, caused by the prevailing westerly winds from the Gulf Stream, but for the same reason it is liable to sudden and violent changes.

That of the *Eastern* part of the continent is rendered much colder in corresponding latitudes, by its exposure to the icy winds of Northern and Central Asia. The *Siroccos* from the Sahara, often do much damage by their scorching heat, but in general are tempered by their great exposure to the sea. The *mountains* of Switzerland, Spain, and Hungary also modify the character of the climate, by cool breezes over the extensive districts they cover.

ANIMALS.

19. Many of the original animals of Europe have been exterminated. The lion, tiger, and ostrich, which, doubtless once roamed in the forests, have disappeared. *Monkeys* are only found on the rocky heights of Gibraltar. The *wild bull* is still met with in the thick woods of Russia. The *meuffon* is found in Greece, Sardinia, and Corsica; the *ibex* in Candia and the Alps; the *chamois*, the hunting of which is followed with ardor, is found in small flocks in the mountains of Central Europe: the *elk*, resembling our moose, inhabits the north. *Reindeer* are numerous, and are domesticated among the Laplanders.

The stag, fallow-deer, roe-buck, wild-boar, lynx, wild-cat, weasel, polecat, marten, sable, genet, badger, glutton, brown and black bear, fox, wolf, jackal, hare, rabbit, squirrel, marmot, beaver, hedgehog, otter, and porcupine, are found in different places.

The *birds* are numerous and of great variety. Eagles, vultures, hawks, and owls are found chiefly in mountainous and woody regions. The *lammergeyer* is a large species of vulture frequenting the Alps. The *falcon*, trained to hunt game, nearly resembles our big-footed hawk. The *singing birds* are numerous, among them is the nightingale; grouse, partridges, and quails are abundant.

VEGETABLE PRODUCTIONS.

20. Europe extending from the Arctic zone to the verge of the tropic presents a great variety of vegetable products. Far to the *north*, the vegetation consists only of mosses, with a few willows and other trees which are reduced to shrubs. In the *middle of Europe*, there are immense forests. Here all the cereal grains flourish, and here, as well as in southern Europe are the most numerous and prolific vineyards in the world.

In *Spain, Italy, and Greece*, the orange, lemon, fig and olive reach their perfection. The varieties of the oak, ash, chestnut, walnut, maple, etc., while resembling those in this country, are still of different species.

Russia produces large quantities of wheat, rye, barley, oats, hemp, flax, Indian corn, tobacco, and honey.

Norway and *Sweden*, wheat, oats, barley, beans, peas, potatoes.

Denmark, the usual grains, and horses.

Holland, cereals, fruits, bulbs and flower roots, cattle.

Southern Europe, oranges, lemons, dates, cotton, grapes, almonds, figs.

Central Europe, grapes, fruits, cereals, sugar-beets, etc.

MINERALS.

21. Europe is less rich in the precious minerals than the other quarters of the globe; but it produces great quantities of coal, iron, lead, tin, copper, salt. Gold, silver, platinum, and diamonds, are found in the Ural mountains; silver in Hungary; quicksilver in Spain; iron and copper in the Scandinavian peninsula, Germany, Belgium, Great Britain, etc.

Austria is said to contain every known mineral save platinum.

Italy and Greece are richest in *marble*.

Coal is mined chiefly in England, Belgium, and Germany.

Rock-salt in Austria.

Lead is found in nearly all the large mountain ranges.

Tin is found only in England and in the Hartz mountains.

MANUFACTURES.

22. The European nations take the lead in manufacturing. The excellent shipping advantages, the great amount of water power furnished by the numerous rivers, the cheapness of labor, the facilities for obtaining raw material, have given to the European nations advantages and incentives to manufacturing enjoyed by no other nations on the globe. In western Europe, in the more densely populated sections, every stream is lined with factories upon its banks.

The different nations of Europe excel in the manufacture of different articles.

The *English* excel in the manufacture of hardware, heavy machinery, rail-road iron, cutlery, cotton goods.

The *Swedes* in iron.

The *French* in perfumery, silks, wines, and articles of fashion.

The *Germans* in heavy iron ware, munitions of war, steel.

The *Dutch*, in butter, cheese, and flower culture.

The *Russians*, in sail-cloth, soap, candles, glass, paper, ropes, etc.

The *Italians*, in guaze, porcelain, parchment. artificial flowers, and musical instruments.

On account of a want of water power, the people of Holland have taken advantage of the prevalence of high winds, and the whole country is made to bristle with wind-mills.

COMMERCE.

23. The total annual value of the commerce of Europe is \$1,601,000,000 imports; and \$3,697,000,000 exports, distributed as follows:

COUNTRIES.	IMPORTS.	EXPORTS.	EXPORTS TO THE U. S.	IMPORTS FROM U. S.
Great Britain.	1,805,000,000	1,220,000,000	194,000,000	381,000,000
France.	689,000,000	726,000,000	52,000,000	51,000,000
Germany.	454,000,000	425,000,000	44,000,000	67,000,000
Russia.	414,000,000	311,000,000	1,250,000	10,333,000
Austria.	294,000,000	216,000,000	500,000	1,750,000
Belgium.	246,000,000	203,000,000	5,750,000	21,000,000
Italy.	252,000,000	240,000,000	8,500,000	8,500,000
Spain.	89,000,000	68,000,000	4,500,000	11,500,000
Holland.	82,000,000	69,000,000	2,500,000	11,400,000
Switzerland.	82,000,000	78,000,000		
Turkey.	79,000,000	26,000,000	750,000	2,500,000
Sweden.	45,000,000	43,000,000		
Norway.	27,000,000	21,000,000	2,000,000	2,323,000
Portugal.	27,000,000	21,000,000	500,000	1,750,000
Denmark.	22,000,000	11,000,000	500,000	2,500,000
Greece.	17,000,000	10,000,000	200,000	333,000

The *exports* are chiefly manufactured articles, while the imports are mainly raw material, and provisions.

NATURAL ADVANTAGES.

24. (The pupil should now be required to give the natural advantages for agriculture, manufactures, and commerce.)

INTERNAL IMPROVEMENTS.

25. *Canals* are numerous in Great Britain, France and Holland. There are also some in other countries. *Railroads and the magnetic telegraph* now connect all important places.

A most remarkable feature of Europe is the high state of improvement of the country, the excellence of its roads, the numerous villages and cities, the number and elegance of its public buildings, the fine and durable bridges.

In 1882 there were 106,000 miles of railroad, and 245,000 miles of telegraph line.

INHABITANTS.

26. The inhabitants belong chiefly to the *Aryan* branch of the human race. There are about five millions of *Feres* scat-

tered throughout Europe, and about sixteen millions *Mongolians*; the latter are found in Turkey, Hungary, and Lapland. The *Aryans* are divided as follows:

Into Germanic, including the Germans, Danes, Norwegians, Swedes, English, Swiss, and Dutch; the Romanic, including the French, Spanish, Portuguese, Italians and Greeks; Slavonic, including the Russians and the Poles; Celtic, including the Irish, Welsh, and Highland Scotch.

POPULATION.

27. The following table will show the number of inhabitants according to the latest authorities:

COUNTRIES	NO. OF IN- HABITANTS	POP. SQ. M.	ST'D'G ARMY.	WAR SHIPS.	NAVY GUNS.	NATIONAL DEBTS.	AREA.
Great Britain,	35,038,000	296	238,000	576	3,600	3,925,000,000	121,608
France,	37,117,000	182	502,664	258		3,762,000,000	204,692
Germany, . . .	45,700,000	218	127,274	86	666	825,000,000	208,431
Austria, . . .	38,000,000	158	292,000	51	473	1,736,000,000	241,035
Russia,	74,500,000	38	839,075	389	380	1,875,000,000	1,953,636
Spain,	16,343,000	84	90,000	121	525	1,500,000,000	193,229
Portugal, . . .	4,613,000	135	30,000	41	178	330,000,000	31,606
Italy,	28,210,000	246	737,565	73	478	1,255,000,000	114,445
Switzerland, .	2,808,000	114	120,000				15,981
Belgium, . . .	5,536,000	487	40,000	4	24	180,000,000	11,373
Holland, . . .	4,037,000	318	63,525	124	500	100,000,000	12,731
Denmark, . . .	2,053,000	139	35,659	35	291	70,000,000	14,789
Norway, . . .	1,879,000	15	12,000	122	293	21,000,000	122,860
Sweden, . . .	1,579,000	27	183,063	137	373	55,000,000	170,979
Turkey,	8,897,000	84	150,000	168		1,075,000,000	105,912
Greece,	1,680,000	87	24,300	34	128	60,000,000	19,345
Romania, . . .	5,376,000	109					49,363
Servia,	1,682,000	89					18,787
Montenegro, . .	300,000	82					3,642
Andorra, . . .	18,000	91					191
San Marino, . .	8,000	333					21
Monaco,	7,000	1,167					6
Luxemburg, . .	205,000	205					9,99
Lichtenstein, .	9,000	132					68
Total,	318,434,000	85					7,666,992

OCCUPATION.

28. Agriculture, manufactures, commerce, mining, and fisheries are carried on with the greatest activity, skill, and success. Nowhere in the world is *agriculture* carried on with so much zeal and perfection as in Western Europe; except in England and Belgium the majority are engaged in it. To an American it is surprising to see the number of women employed in the fields. Farms, in general, are small and are cultivated with all the skill of gardening.

LANGUAGE.

29. A great variety of languages are spoken in England. The

following table will exhibit the language, government, and religion of the principal countries :

	LANGUAGE.	GOVERNMENT.	RELIGION.	PER CENT. OF ILLITERACY.	
Great Britain,...	English,	Kingdom, limited monarchy	Protestant,	23	States of first rank.
France,.....	French,	Republic,	Catholic,	33	
Germany,.....	German,	Empire,	Protestant,	12	
Austria,.....	{ 20 different languages, principally German,	Empire,	Catholic,	49	
Russia,.....	Russian,	Despotism,	Greek,	91	States of second rank.
Spain,.....	Spanish,	Kingdom,	Catholic,	80	
Portugal,.....	Portuguese,	Kingdom,	Catholic,	Very large	
Turkey,.....	Turkish,	Despotism,	Moham'edon	Very large	
Swe. & Norway,	Nor. and Swedish,	Kingdom,	Lutheran,	Nearly free	States of second rank.
Belgium,.....	{ Ger. and French / Flemish,	Kingdom,	Catholic,	30	
Holland,.....	Dutch,	Kingdom,	Pres. & Cath	18	Of third rank.
Denmark,.....	Danish,	Kingdom,	Lutheran,		
Switzerland,...	Ger. and French,	Republic,	Luth. & Cath		Of third rank.
Greece,.....	Greek,	Kingdom,	Greek,		
Romania,.....	Latin dialect,	Principality,	Greek,		States of fourth rank.
Andora,.....	Catalan,	Republic,	Catholic,		
Liechtenstein,...	German,	Principality,	Catholic,		
San Marino,...	Italian,	Republic,	Catholic,		
Monaco,.....	Italian,	Principality,	Catholic,		

CLASSES.

30. In almost every European state we find the citizens divided into four distinct classes.

The first is that of the *nobility*, which exists in most states, with the exception of Norway, Switzerland, France and the Turkish Empire.

The *clergy* form the second class of the community.

The *third class* is that of the citizens, or inhabitants of towns, who, in most countries, enjoy peculiar rights and privileges.

The *fourth and lowest class* includes the peasants, and forms the mass of the population in every country.

EDUCATION.

31. Education is becoming far more general than formerly, but there is still a large per cent. of illiteracy in many countries as will be observed by referring to the preceding table. Germany has perhaps the best school system of any country on the globe. Every child is compelled by law to attend school.

In the territory acquired in the late war with Austria there were a number of states in which the illiteracy was great, so that in giving the per cent. of illiteracy of Germany, she appears at a disadvantage.

RELIGION.

32. All creeds are tolerated in all the countries of Europe, and the prevailing religion of each country has been given in the pre-

ceding table. There are 154,479,500 Roman Catholics; 78,875,000 Protestants; 71,405,000 Greek Christians; 8,675,000 Mohammedans; 5,000,000 Jews.

CHIEF CITIES.

33. The cities of Europe constitute a remarkable feature of the country, on account of their great population, and the superb buildings they contain, with their various institutions for the encouragement of art, literature and science.

The following is a list of the principal cities with their population:

London, 3,445,000, the largest city in the world and the first in commercial importance.

Liverpool, 516,000, the greatest cotton emporium. Ship-building is carried on to a great extent.

FRANCE.	SWITZERLAND.	DENMARK.
Paris,.....1,989,000	Geneva.....68,000	Copenhagen.....198,000
Lyons.....343,000	Basle.....45,000	NORWAY.
Marseilles,.....319,000	Berne.....36,000	Christiania.....100,000
Bordeaux.....215,000	Zurich.....21,000	Bergen.....34,000
Lisle.....163,000	GERMANY.	SWEDEN.
Toulouse.....132,000	Berlin.....697,000	Stockholm.....176,000
Nantes.....119,000	Hamburg.....265,000	Gottenberg.....69,000
Rouen.....105,000	Breslau.....239,000	RUSSIA.
SPAIN.	Dresden.....197,000	St. Petersburg.....668,000
Madrid.....367,000	Munich.....199,000	Moscow.....602,000
Barcelona.....216,000	Cologne.....135,000	Warsaw.....302,000
Valencia.....103,000	Koningsburg.....123,000	Odessa.....185,000
Seville.....119,000	Leipsic.....127,000	Riga.....99,000
PORTUGAL.	Hanover.....107,000	Astrakhan.....48,000
Lisbon.....253,000	Stuttgart.....107,000	AUSTRIA.
Oporto.....89,000	Frankfort-on-the-	Vienna.....1,002,000
ITALY.	Main.....103,000	Buda-Pesth.....309,000
Rome.....229,000	Bremen.....102,000	Prague.....190,000
Naples.....449,000	Dantzic.....98,000	Trieste.....109,000
Milan.....261,000	BELGIUM.	TURKEY.
Palermo.....228,000	Brussels.....183,000	Constantinople.....700,000
Turin.....208,000	Antwerp.....149,000	Adrianople.....150,000
Florence.....167,000	Ghent.....128,000	ROUMANIA.
Genoa.....130,000	Liege.....118,000	Bucharest.....222,000
Venice.....129,000	HOLLAND.	GREECE.
Bologna.....116,000	Amsterdam.....290,000	Athens.....45,000
Messina.....112,000	Rotterdam.....123,000	Corinth.....6,000
Leghorn.....97,000	The Hague.....104,000	

ANCIENT GEOGRAPHY.

34. It will be observed that geography has been a progressive science. In the early ages of the world, mankind had no just notions either of its extent or form. Homer, who flourished about 1,000 years B. C., may be supposed to have had as enlightened ideas of geography as were then entertained. He supposed the earth to be a vast plain, surrounded by a shoreless ocean; beneath

he placed the Elysium, or *Paradise*, and *Tartarus*, or *hell*. Above was the arch of heaven, supposed to rest on the mountains as pillars. The sun, moon and stars were supposed to rise from the sea in the morning, and to set in it at night. It was believed that those who lived in the remote west could hear the hissing noise of the fiery orb of day as he plunged into the ocean.

Physical geography remains the same from age to age; or, if there is a change, it is unimportant in a general view. The seas, the mountains, the rivers, the coasts of those portions of the earth embraced in the map, therefore, present the same prominent features at the present day, as those which marked them in the time of Cæsar, of David, and of Moses. Particular portions of the earth, also, in many cases, bear the same names now as in ancient times, notwithstanding the fluctuations of political boundaries, and the mutations and revolutions of human society. The following table will be found useful for reference:

ANCIENT DIVISIONS OF EUROPE.

ANCIENT NAMES.	MODERN NAMES.	ANCIENT NAMES.	MODERN NAMES.
Grecia.....	Greece.	Germania.....	Germany.
Italia.....	Italy.	Helvetia.....	Switzerland.
Hispania.....	Spain and Portugal.	Sarmatia...	Poland, part Switzerland.
Gaul.....	France.	Scandinavia. N. w. y.	Sweden Denmark.
Britain.....	Britain.	Flanders.....	Belgium.
Hibernia.....	Ireland.	Botavia.....	Holland.
Caledonia.....	Scotland.	Sicily.....	Sicily.

HISTORY.

ANCIENT GREECE.

35. The history of Europe begins with the settlement of Greece. It is said that, in the year 1856 before Christ, *Inachus*, a Phœnician adventurer, arrived with a small band of his countrymen, and made a permanent settlement upon this peninsula. At that time, Assyria and Egypt had risen to a considerable degree of civilization, while nearly all other nations were in a state of barbarism. Europe was covered with an unbroken forest, inhabited only by wild beasts, except a small band of savages, called *Pelasgians*, were scattered here and there over the country. In 1556 B. C., a colony led by an Egyptian, named *Cecrops*, established themselves in Attica, and here, in due time rose the renowned city of Athens. Corinth was founded in 1520. Sparta, or Lacedæmon, the celebrated capital of Laconia, was founded by *Lelex*, also in 1520.

Cadmus, a Phœnician, founded the city of Thebes, in Bœotia, bringing with him alphabetical writing and other useful arts, which are diffused over Greece. The history of these early periods, which we derive from the Greek

writings, is obscured by fable: actual events being strangely blended with fabulous marvels, relating to gods and heroes. It is not till about 1,000 B. C., that history becomes authentic and reliable.

The Greeks spread themselves over the peninsula and adjacent islands, and finally planted colonies in Asia Minor. This active and ingenious people steadily advanced in prosperity, and about five centuries before the Christian era they had become the most powerful, learned, and refined nation of the earth. They were divided into numerous states, and frequently engaged in violent and desolating wars with each other. In the year 480 B. C., they combined in defense against Xerxes, king of Persia, who invaded their territory with an army, consisting of from two to three millions of men. This defense was successful, and the invader was driven back with humiliation, his army being dispersed and his power broken. In the year 331 B. C., Alexander the Great, king of Macedon, including Greece, invaded Persia, and, in the space of a few years, made himself master of the entire Persian empire. From this time, Greece gradually declined; and in the year 146 B. C., it was conquered by the Romans, and reduced to a Roman province. Its arts, learning, and philosophy continued, however, for many centuries, to exercise a civilizing influence; and, even at the present day, the relics of its eminent writers, which have survived, impart instruction to the classical scholar.

ANCIENT ROME.

Rome is said to have been founded in the year 753 B. C., by *Romulus*, belonging to a Greek colony settled in that quarter. He collected together, by his policy, a considerable number of brave and daring men. By degrees a great city rose on the banks of the little river Tiber, where the present city of Rome stands. Various tribes, some of them more civilized than the Romans, at this time inhabited Italy; but these were all gradually subdued and brought under Roman sway. Several able sovereigns succeeded Romulus; but in the year 509 B. C., in consequence of the misconduct of the king, named *Tarquin the proud*, an insurrection arose, headed by *Brutus*, which resulted in changing the government to a Republic. From this time, the power of Rome gradually increased, until she became mistress of nearly the whole civilized world. About the year 45 B. C., the Roman republic was overturned by Julius Caesar. Several ambitious men now struggled for the supreme power, till the year 30 B. C.; when Augustus Caesar gained the ascendancy and was declared emperor. At this period, the empire embraced nearly the whole of Europe, the northern and north-eastern portions of Africa, and all western Asia. It continued, under various emperors, for several hundred years.

In the year 395 A. D., the empire was divided into the *Eastern* and *Western*. The capital of the former was at Constantinople. Its territories extended over Greece, Asia Minor, Syria, Egypt, etc. This power is often called in history the *Greek Empire*, and also the *Byzantine Empire*. The *Western*

Empire had Rome for its capital, and comprised the larger portion of Europe; but in the year 476 A. D., it was finally overwhelmed by numerous warlike tribes from the North.

BARBARIANS.

The people who thus destroyed the Roman Empire consisted of various nations of Barbarians from Norway, Sweden, Denmark, and different parts of Germany. For two thousand years prior to this event, numerous tribes from central portions of Asia had continued to emigrate to northern Europe; some passing north of the Caspian, and others between the Caspian and Black seas. Among these was a very numerous tribe called the *Celts*, who settled in France, then called *Gaul*. Spreading in various directions, some passed into Spain, some into northern Italy, and some into England, Ireland, and Wales. Portions of these made formidable attacks upon their southern neighbors, at an early date.

In the year 366 B. C., 70,000 of them marched against Rome, and got possession of the city, excepting the Capitol. The cackling of the geese in the Temple of Juno gave warning to the sentinels, as the Gauls, at night, were about to surprise this fortress. The Romans only saved their city from destruction by a heavy tribute of gold. In the year 278 B. C., an immense force, under *Brennus*, ravaged Northern Greece; but they were dispersed and driven back. *Julius Cæsar* marched into Gaul, and after sacrificing a million of men, reduced the country to a Roman province. In Germany the tribes were numerous, and of a warlike disposition. These bore the general name of Teutones, including various minor divisions.

Besides these were the *Goths*, who had settled in Sweden and the vicinity; the *Vandals*, a kindred tribe in the same quarter; the *Ostrogoths*, of Austria; the *Suevi*, near the Baltic, and many others. These people increased in numbers and power, and, as the Roman empire became weakened, they grew troublesome and dangerous.

About the year 410 A. D., *Alaric*, king of the Visigoths, a people dwelling on the Danube, thrice marched against Rome, and in two instances made himself master of it. In the year 451, Attila, king of the Huns, crossed the Alps, and, advancing toward Rome, threatened that city with destruction. This was only prevented by large bribes given to the barbarian chief by the Pope.

The Roman empire had been built up by making war, without scruple or mercy, on all other nations. The day of retribution was now at hand. The Romans were enfeebled by luxury, and degraded by every species of vice and corruption. The northern nations were poor, but vigorous, daring and warlike. Alaric and Attila had taught them the way to Rome. The rich cities and smiling valleys of Italy seemed to invite them to exchange their cold and sterile homes, with their poverty, for the boundless riches and happy climate of the south. They were not long yielding to this temptation. Like a mighty river breaking its boundaries, they came over the Alps in a living and impetuous torrent, taking possession not only of Italy, Spain, and part of Greece, but they swept across the Mediterranean, and settled down upon the cultivated parts of Northern Africa.

THE MIDDLE AGES.

The events that immediately preceded the fall of Rome were of the most terrific character. The whole of Europe seemed covered with armies of fighting men.

There was, indeed, a general movement from Great Britain to the shores of China, in Asia. The lives of several millions of human beings were sacrificed in this frightful convulsion. At last, *Odoacer*, chief of the Heruli, a German people, was made king of Rome. The barbarians had now full possession of Italy. Roman civilization was at once extinguished. The books, paintings, statues, and works of art which the Romans had robbed from other nations, or had themselves produced, were destroyed by its rude illiterate conquerors. The *Dark Ages*, or, as they are frequently called, the *Middle Ages*, which continued for a thousand years, now began. Kings and princes made it their boast that they could neither read nor write. Learning was confined almost wholly to the Monks. In the universal ignorance, an infinite variety of superstitions overspread the minds of men.

An eclipse of the sun was thought to be a forerunner of the end of the earth; comets were deemed fiery monsters threatening war, pestilence, and famine; and even common events were imparted to miraculous causes. The belief in witchcraft was universal. Ghosts were imagined to walk abroad at night, fairies to dance in the meadows; and every house and home was haunted by good or evil spirits. Men were tried, not by judge and jury, but by ordeals of fire and water. Judicial perjury prevailed everywhere. Robbery by land, and piracy by sea, were practiced by kings and nobles. Yet this page of darkness was relieved by some pleasing passages. We are told of knights and fair ladies who went to the fields with their falcons; knights errant traversed the country in search of adventures; the crusades ran their wild career. The reformation broke the spell of superstition; one by one, the modern nations of Europe were founded; and at last, about the commencement of the sixteenth century, the age of darkness ceased, and a new *Era of Light* dawned upon the world.

THE MODERN KINGDOMS OF EUROPE.

The present states and kingdoms of Europe have all originated within the period called *Modern History*. France became a kingdom in the time of Clovis, A. D., 481; England in 827; and Spain in 1479. The power of Austria was founded in 1273; Prussia became a kingdom in 1701; Germany became a distinct monarchy in 883; Denmark about 1050; and Russia about 1050. These kingdoms were originally built upon the feudal system; but though in some cases the forms of government continue, their original character has yielded to the softening influence of modern civilization.

CHRONOLOGY OF PRINCIPAL EVENTS.

B. C.

First settlement of Greece by Inachus	1856
Athens founded	1556
Trojan war	1184

The celebrated poet, Homer, lived.....	1000
Rome founded.....	753
Tarquine expelled.....	509
Rome taken by the Gauls.....	389
Alexander sets out for the conquest of Persia.....	331
Greece reduced to a Roman province.....	146
Gaul or France conquered by Cæsar.....	55
Great Britain invaded by Cæsar.....	50
Begining of the Roman empire.....	30
A. D.	
London founded by the Romans.....	50
Roman empire divided.....	395
End of the Roman empire in the west.....	476
Spain conquered by the Saracens.....	713
Charlemagne crowned Emperor of the west.....	800
First Crusade.....	1096
Kingdom of Portugal founded.....	1132
Gunpowder first known in Europe.....	1330
Printing invented.....	1444
America discovered by Columbus.....	1492
Beginning of Luther's Reformation.....	1517
Telescopes invented in Germany.....	1590
Charles I., of England, beheaded.....	1642
Prussia becomes a kingdom.....	1701
Great earthquake at Lisbon.....	1755
French Revolution.....	1789
Louis XVI. beheaded.....	1693
Italy conquered by Bonaparte.....	1796
Napoleon Bonaparte crowned emperor of France.....	1804
Battle of Waterloo—Napoleon overthrown.....	1815
Death of Napoleon.....	1821
French Revolution—Louis Philippe proclaimed king.....	1830
Belgium separated from Holland.....	1830
Victoria proclaimed queen of Great Britain.....	1837
Louis Philippe dethroned—France a republic.....	1848
Franco—Prussian war.....	1871

GREAT BRITAIN.

MAP EXERCISES.

Locate the following:

CAPES:—Land's End, Duncansby Head, Wrath, Clear, Mizen, Erris Head, Malin Head.

GULFS, ETC.:—Galway, Donegal, Cardigan, Dornoch Firth, Moray Firth, Firth of Forth, Firth of Tay, The Wash, Salway Firth.

SEAS:—Irish, North.

STRAITS AND CHANNELS.—Dover, English, North, St. Georges, Bristol, Menai.

ISLANDS.—Great Britain, Ireland, Man, Scilly, Wight, Anglesey, Islay, Skye, Hebrides, Orkney, Shetland, Channel, Lewis.

MOUNTAIN RANGES.—Lowther Hills, Grampian Hills, Cheviot Hills, Cambrian, Cumbrian, Pennine.

MOUNTAIN PEAKS.—Snowdon, Ben Nevis.

LAKES.—Erne, Neagh.

RIVERS.—Thames, Severn, Clyde, Shannon, Humber, Trent.

RELATIVE POSITION.—In what direction is London from Liverpool? from Dublin? Edinburgh? Paris? Strait of Dover? Liverpool from Glasgow? Cork?

TRAVELS.—On what bodies of water would you sail in going from London to Liverpool? Dublin? Dundee? St. Petersburg? Liverpool to Lisbon? Havre? Bremen? Bristol? New York? Columbus, O.?

MISCELLANEOUS.—What is the latitude of London? Dublin? Edinburgh? What is the longitude of each of these places? What is the difference of time between London and Dublin? Between London and Berlin? What seasons has the northern part of Scotland?

DESCRIPTION.

POSITION.

1. Great Britain is situated in the north-western part of Europe and is surrounded by the Atlantic Ocean, North Sea, English Channel and Strait of Dover.

It lies between 50° and 55° north latitude and between 2° east and 10° west longitude.

EXTENT.

2. England is 380 miles long and 160 wide: area 51,000 square miles. Scotland is 300 miles long and 160 wide: area 30,000 square miles. Ireland is 300 miles long and 200 wide: area 33,000 square miles. Wales contains an area of 7,000 square miles.

GENERAL OUTLINE OF THE COAST.

3. The coasts are irregular and abound in deep inlets. The shores of England are generally rocky. On the English Channel,

there are high and chalky cliffs, whose white appearance gave the island the name of *Albion* in ancient times. The south-eastern extremity, is a long peninsular projection terminating in what is called *Land's End*.

The eastern coast of Ireland is low and flat, except the north-east, where the shore is rugged and precipitous.

CAPES.

4. Duncansby Head projects from the north-east of Scotland; on the summit is an ancient watch-tower. Cape Wrath projects from the north-west of Scotland, and contains a light-house 400 feet high. Malin Head projects from northern Ireland and Cape Clear, from southern Ireland.

GULFS AND BAYS.

5. *Bristol Channel*, the largest bay, is twenty miles wide and sixty long. Nearly all the important rivers of Great Britain have wide mouths, resembling bays. The mighty waves of the Atlantic have scooped out some large bays in the west coast of Scotland. There are numerous small harbors.

SEAS.

6. The North and Irish Seas belong to this portion of Europe; their surfaces are always white with the sails of ships.

CHANNELS AND STRAITS.

7. The following are the principal:

STRAITS, ETC.	WIDTH.	LENGTH.
Dover	21	
English	20 to 155	300
North	30	65
St. Georges	40	100
Memia Strait	2	11

ISLANDS.

8. This division of Europe is an archipelago, embracing 5,500 islands, but the vast majority are small and rocky.

The *Isle of Man*, in the Irish Sea, contains a population who still use the Manx language.

The *Isle of Wight* is a beautiful and fertile island at the south; it presents almost every variety of landscape in miniature.

Near the southern extremity are the *Scilly Isles*, 145 in number; six are inhabited, the rest are mere rocks. Numerous *druidical monuments* are found here.

The islands of Guernsey, Jersey, Alderney, and Sark, lie near the French coast, all are inhabited, and belong to England; the largest is twelve miles long.

Of the numerous islands west of Scotland, 87 are inhabited and cultivated; the products being cattle, sheep, fish, kelp, birds' eggs, and feathers. The hunting of birds' eggs, by swinging over the rocky ledges, is a leading occupation of the people among all the islands.

The *Orkneys*, 70 in number, are rocky, barren and desolate.

Fifty miles to the north are the *Shetland Isles*. They are 80 in number, 40 being inhabited. They are bleak and barren and surrounded by tempestuous seas.

ISLANDS.	LENGTH.	BREADTH	AREA	POP.	REMARKS AND PRODUCTS.
Man	30	6 to 12	280	54,000	Lead, zinc, iron, copper
Wight	22½	13½	146	66,000	Malt, wool, salt, sand for the manufacture of glass are exported.
Shetland..			5,338	31,600	Coasts bold and rocky with precipitous cliffs.
Orkney .			2,118	31,000	73 in number; 30 are inhabited. Oats, barley, potatoes, and turnips are the chief crops.
Hebrides			3,000	150,000	160 in number. The language is Gaelic
Islay	25	17		8,000	Meal, bog iron ore, lead, and copper mines
Anglesey,	20	17		51,000	Wheat, barley, oats, cattle, fish, copper and lead are exported.
Mull.	30	18		18,000	Surface is rugged.

Staffa, 11½ miles in circumference, is remarkable for its caverns, the principal of which are Fingals, and Clam Shell.

SURFACE.

9. In general, the aspect of England is varied and delightful. In some parts, verdant plains, watered by copious rivers, extend as far as the eye can reach. In others are swelling hills and bending vales, fertile in grain, waving with wood, and interspersed with meadows. Some tracts abound with prospects of the more romantic kind, embracing lofty mountains, craggy rocks, deep narrow dells, and tumbling torrents. Here and there are black moores, wide heaths, and desolate plains. The south-eastern parts are level or slightly undulating while the northern and western portions are hilly and mountainous.

Wales is a rugged country.

The surface of *Scotland* is, in general, much broken by hill and dale, mountain and valley.

Ireland contains immense tracts called *bogs*, extending in a broad belt through the center of the island, producing nothing but heath, bogmyrtle, and sedge-grass. The remainder of the soil is stony, but high cultivation has rendered much of it productive. The surface of Ireland is generally level, with swelling hills and a few mountains of moderate elevations. The general appearance of the country is varied and pleasant, destitute of trees, but cheer-

ful on account of its verdure. The bogs furnish ample supplies of peat used by the inhabitants for fuel.

MOUNTAIN RANGES.

10. The mountain chains of the British Isles are not lofty, but few of the peaks have an elevation of more than 3,000 feet.

MOUNTAIN PEAKS.

11. The following are the highest peaks:

Snowdon, (Wales),.....	3,600 feet.
Ben Nevis, (Scotland),.....	4,370 feet.
(On the one side it has a perpendicular precipice of 1,500 feet affording a fine prospect.)	
Ben Lomond, (Scotland),.....	3,820 feet.
Broad Low, (Cheviot Hills),.....	2,740 feet.
Skiddaw, (Cumbrian Mountains),.....	3,022 feet.
Scafell, (Cumbrian Mountains),.....	3,330 feet.

PLAINS AND VALLEYS.

12. The country known in England as the *Fens*, is a flat, marshy district near the wash. There are numerous *heaths*, which first derived their name from being covered with a plant by that name. They are generally uncultivated, shrubby wastes. The *downs* are sterile tracts, chiefly used as sheep pastures. There are no valleys of great extent. The borders of the rivers are generally crowded with cities, teeming with population.

NATURAL CURIOSITIES.

13. England possesses quite a number of curiosities, consisting of curious peaks, and caverns, petrifying wells, etc.

In the small island of *Staffa* is the celebrated basaltic cavern called *Fingal's Cave*. It is 227 feet long, 166 feet high, and 66 feet wide at the mouth.

The *Giant's Causeway*, on the north-western coast of Ireland, is an immense mass of basaltic columns, standing compactly together, and having from three to seven sides.

They are perpendicular, smooth, and regular, as if hewn by art. They are of different pieces, two to three feet long, and nicely fitted together like ball and socket joints. The Irish legend is that it was built by a race of giants to form a road to Scotland. It is 600 feet long.

To the west of this are the *ruins of Dunluce Castle*, remarkable for their situation on an elevated rock cliff overhanging the sea.

ANTIQUITIES.

14. There are many ruins and remains of past ages scattered over England. Some of these are supposed to have been connected with the worship of the *Druids*, who were the priests of the

ancient Britons. The ruins of ancient abbeys and castles, found in different places, are interesting relics of by-gone times.

Near *Perth* in Scotland are circular towers of unknown origin. There are large inclosures, with vitrified walls, in several places.

In the south of Scotland are vestiges of *Roman roads* and *camp*s, and parts of *Antonine's wall*, which extended from the Forth to the Clyde.

The remains of *Roslin Castle*, *Melrose Abbey*, and other gothic structures, are celebrated in song and sketches of tourists.

LAKES.

15. The lakes of England are small, but celebrated for natural beauty heightened by cultivation and the country seats around.

Windermere is ten miles long, and one to two broad.

Derwentwater four miles long, is esteemed the most beautiful.

The *lakes of Scotland* are associated with the romance and song of that country.

Loch Lomond, the largest, is thirty miles long, and sprinkled with islands.

Near by is *Loch Katrine*, famous for its scenery, accurately described in Scott's charming poem, "The Lady of the Lake."

Ireland abounds in lakes and some of them are valuable for their fish and commercial importance.

(1) The largest is *Lough Neagh*, in the north, fifteen miles long and seven broad.

(2) *Erne* and *Corrib* are narrow sheets of water of considerable length.

The *lakes of Killarney* are famous for their picturesque beauty. They contain "the wildest ravines, the finest woods, and some of the boldest cascades in Ireland."

RIVERS.

16. The rivers of the British Isles are for the most part quite small. The following are the principal.

RIVERS	LENGTH.	AREA OF BASIN	REMARKS
Thames.	215	6,160	Navigable to London, 60 miles.
Severn.	210		Navigable 180 miles; tides perceptible 120 miles, and the bore is violent.
Mersey.	60		Navigable 30 miles.
Humber.	40		Navigable full course.
Clyde.	75		It contains the falls of the Clyde, 230 feet high.
Tweed.	95	1,870	Only a few miles, but it is remarkable for its salmon fisheries.
Shannon.	224	8,000	Nearly all of it is navigable.
Great Ouse.	160		105. Very tortuous course.

SOIL.

17. The soil is not naturally fertile, but diligent and skillful cultivation has made it one of the most productive countries of the globe. England is farmed like a garden. The great amount of rainfall assists much in the rearing of crops. Owing to their moist climate these islands are covered with a remarkable verdure. *Ireland* and *Scotland* are less fertile than England. Some of the valleys of Scotland have a good soil. Yet a great part of the country is barren. The *mountains* are *naked of trees*, and have a gloomy but picturesque aspect. The country is divided into the *Highlands*, in the north, and the *Lowlands*, in the south. The former embrace two-thirds of the territory. The latter presents beautiful hills, vales, and cultivated plains, with many fine country-seats and noble parks.

CLIMATE.

18. *England* has an atmosphere of fog, rain, and perpetual change; yet the climate is mild. The rigors of winter, and heats of summer, are tempered by the surrounding sea. Many kinds of kitchen vegetables remain uninjured in the ground through the winter. Most of the fields retain their verdure throughout this season. The snows rarely lie upon the earth more than two or three days. The Scilly islands have a semi tropical climate.

The climate of *Wales* is colder than that of England, and snow is common among the mountains.

The climate of *Scotland* is distinguished for its fogs and drizzling rains. Twilight in summer lasts all night.

The moisture of *Ireland* is in excess of that of England. The average rain-fall of Great Britain is about 34 inches.

ANIMALS.

19. The wolf, bear, and some other savage animals have been exterminated. The badger, fox, wildcat, weasel, marten, otter, squirrel, and dormouse remain. The stag and fallow-deer are wholly or partially domesticated on some of the large estates, except in some of the forests of Scotland where they are still found wild. Hares, pheasants, and rabbits abound in the preserves. The *domestic quadrupeds* have been brought to the highest perfection by breeding and training.

Eagles, hawks, and singing-birds are numerous. The *domestic birds* are wholly of foreign origin; *poultry* from Asia, the *Guinea-fowl* from Africa, *peacock* from India, *pheasant* from Colchis, and the *turkey* from America.

The *reptiles* and insects are few. St. Patrick is said to have caused the destruction and eternal banishment of all reptiles from Ireland.

Turbet, dace, sole, cod, plaice, smelt, shrimp, etc. are found along the coast. Salmon, trout, etc., frequent the rivers. Shell-fish abound.

AGRICULTURAL PRODUCTIONS.

20. But few of the vegetable products of England are indigenous. The most useful plants have been imported from the continent.

Wheat, rye, barley, oats, and cattle are staple products. Flax and potatoes are leading crops of Ireland. Horses are raised in considerable numbers. It is curious that this animal dwindles to a pony in the northern British isles.

MANUFACTURES.

21. Great Britain surpasses all other countries in the extent, variety, and perfection of its manufactures. They consist of cottons, woolens, linens, hardware, cutlery, machinery, railroad-iron, glass, paper, prepared tobacco, flour, butter, whiskey, etc.

MINERALS.

22. Salt, iron, coal, and tin are abundant. The resources of the British isles in their useful minerals surpasses those of any other country, excepting the United States.

England furnishes more than one-half of all the coal, nearly one-half of all the iron, and one-third of all the lead used in the world, beside more tin and copper than any other country.

Slate and limestone are common in Wales.

Marble and some gold and silver have been found in Ireland; the coal of the latter country is of inferior quality.

COMMERCE.

23. In the extent of her commerce, Great Britain exceeds every other country on the globe. In 1879 (the latest official report) the *imports* amounted to £363,000,000; the *exports*, £249,000,000.

The chief articles of import are as follows: Grain, seeds, fruits, animals and animal provisions, tobacco, cotton, wool, lumber, cordage, coffee, teas, spices, etc.; the exports are fuel, raw metals, pottery, glassware, machines, vessels, cotton and woolen goods, clothing, cutlery, hardware, yarn, etc. Whole number of merchant vessels 26,000, of 6,550,000 tons, manned by 210,000 men.

NATURAL ADVANTAGES.

24. (Let the pupil give the natural advantages for commerce, agriculture, and manufacturing, from what he has learned.)

INTERNAL IMPROVEMENTS.

25. *Railroads* and *canals* cross in every direction. The *common roads* are the best in the world. *Electric telegraphs* connect London with every quarter of the globe. In no country is the internal intercourse rendered so easy as in England. There about 105,000 miles of telegraph wire.

NUMBER OF MILES OF RAILROAD.

England,.....	20,192
Scotland,.....	4,609
Ireland,.....	3,667
Total..	28,468

Caledonian canal, situated in northern Scotland, is the most important of its kind in Great Britain and is sixty miles long.

INHABITANTS.

26. The inhabitants of Great Britain are divided into three classes: the nobility, which includes dukes, marquises, earls, viscounts, and barons; the *gentry*, including those who are distinguished for wealth, education, talents, or official station; and the *commonality*, which comprises the mechanics, tradesmen, and the working classes generally. The *English* are a robust, florid, handsome people, fond of domestic life, and largely addicted to athletic amusements.

The people of Wales are industrious and frugal. The people are descendants of an ancient Celtic tribe, and their original language is still preserved and spoken by some of the people.

The *Scotch* are divided into the *Highlanders* and *Lowlanders*. The former are of Celtic origin, and speak what is called the Gaelic dialect.

They still retain many of their ancient manners and dress. In general the Scottish nation has displayed high intellect, especially in history, philosophy, poetry, and prose fiction. Nearly all their lakes, rivers and mountains are celebrated in the songs of Burns, Ramsey, and other poets. Scott has thrown a peculiar charm over many localities by his ballads and historical romances.

In the northeast of *Ireland*, a large part of the population consists of the descendants of English and Scotch, who settled in the country many years ago. The *rest* are of Celtic origin. Their native language, called the *Irish* or *Erse*, resembles that of the Welsh and Scotch Highlanders. In some parts of the south and west many of the people know no other language. The beggars in Ireland are numerous, and celebrated for their eloquence.

A great part of the peasantry live in miserable mud cabins, usually with a floor of clay, and without windows and chimneys. The chief food of the

peasants consists of potatoes and milk. In 1847, a blight, called the *rot*, fell upon the potato crop, in consequence of which the country was desolated by famine and pestilence. It is supposed that three or four hundred thousand persons died of starvation during this frightful period.

The *Irish* are remarkable for wit, cheerfulness, and warmth of heart; and Swift, Goldsmith, Steele, Grattan, Curran, Burke, Thomas Moore, Wellington, and O'Connell, all Irishmen, have furnished brilliant examples in the highest walks of genius.

NUMBER OF INHABITANTS.

27. The following table will exhibit the population of the British Empire, together with the area :

	AREA.	POPULATION.
England and Wales.....	58,311	25,480,000
Scotland.....	30,463	3,661,000
Ireland.....	32,551	5,364,000
Islands in British waters.....	303	145,000
Soldiers and Sailors abroad.....		216,000
Total.....	121,608	34,866,000

	AREA.	POPULATION.
Foreign possessions in Europe.....	145	172,000
“ “ “ Africa.....	391,000	2,854,000
“ “ “ Asia.....	933,000	195,000,000
“ “ “ Australia.....	3,085,000	2,821,000
“ “ “ America.....	3,359,000	5,270,000
Total foreign possessions.....	7,770,000	205,620,000
Total British Empire.....	7,890,000	210,487,000

OCCUPATION.

28. The leading occupations are manufacturing, commerce, and mining.

Agriculture engages many of the inhabitants. Many of the farms in England are large, while those of Wales and Scotland are very small, the vast majority of land-owners having less than five acres. England surpasses every other country in the skill with which its agriculture is conducted. In the rest of the kingdom agriculture is in a more backward state.

The fisheries of Great Britain give employment to many thousands of people.

LANGUAGE.

29. The prevailing language is the English, but in many parts outside of England, the inhabitants still use the original tongues.

GOVERNMENT.

30. The Government of Great Britain is a limited hereditary monarchy.

The *Parliament* consists of a *House of Lords* and *House of Commons*. These make the laws which must be ratified by the sovereign. The *Commons* constitute the *Lower House* and are elected by the people; the Lords hold their positions by hereditary right. The supreme power is vested in a *king* or *queen*. The present ruler is Queen Victoria.

There are several palaces occasionally occupied by the sovereign. That in London, called the *Buckingham Palace*, is one of the finest. *Windsor Castle*, a splendid pile of buildings, in the ancient style, twenty miles from London, is another royal residence. A summer residence of the royal family is at Balmoral Castle, Scotland.

EDUCATION.

31. In England education is now pretty generally provided for, although for the poorer classes the means are not yet ample and many depend on Sunday Schools for instruction. There is considerable illiteracy among the Irish.

Scotland is noted for the general diffusion of education among the people. There are many universities and schools of a superior order, especially in Scotland and England. The *universities* of Oxford, Cambridge, and Edinburg are world-renowned.

RELIGION.

32. The established religion of England is Episcopacy. The king or queen is the supreme head of the church, which is governed by two archbishops and 26 bishops; in the colonies and dependencies, 32 bishops. The archbishop of Canterbury is styled the *primate* of all England.

Dissenters are numerous, embracing Methodists, Baptists, Quakers, Roman Catholics, etc. These comprise about one-half the population.

The *Presbyterian* is the established church of Scotland, but there is a large secession from this called the *Free Church of Scotland*, besides a considerable body of dissenters.

More than three-fourths of the people of Ireland are *Roman Catholics*; in the north the Presbyterian faith prevails.

CITIES.

33. London, the capital of the kingdom, is the richest and most populous city in the world. It has a population nearly equal to that of Ohio and West Virginia combined. The river Thames passes through it, and over this there are several splendid bridges.

The largest is 1239 feet in length. There is a passage called the *tunnel*, which goes under the river Thames from one side to the other.

Among the numerous splendid edifices in London, are the Parliamentary Houses, Westminster Abbey, St. Paul's Cathedral, the Tower, the Bank of England and the Royal Exchange. The *West End* contains the residences of the nobility and gentry, and the eastern part is devoted to business. London, at all times has an atmosphere dimmed with smoke; but in the winter, the smoke and fog together, render it so dark, that it is often necessary to light the lamps of the streets during the day. A celebrated English poet thus describes the scene at this period:

"No sun, no moon,
No morn, no noon,
No dusk, no dawn
 No proper time of day.

No sky, no earthly view,
No distance looking blue,
No road, no street
 No 'tother side the way."

The country for miles around London is thickly studded with dwellings, sometimes in groups, and sometimes standing apart, the grounds being tastefully laid out and ornamented with gardens and pleasure grounds.

Among the other cities of note are *Liverpool*, which has an extensive trade with America; *Manchester*, famed for its manufacture of woollen goods; *Birmingham*, for its hardware; *Sheffield* for its cutlery; *Leeds*, for its woollen goods; *Coventry*, for its watches; *Bath*, one of the handsomest cities in England, is noted for its mineral waters.

Bristol, Cheltenham and Brighton are also well known as watering places.

Merthy Tydvil, the chief city of Wales is noted for its iron furnaces.

Edinburgh, the capital of Scotland, is renowned for its great number of literary men, and is one of the most interesting cities in the world.

Glasgow is situated in the midst of coal and iron mines and is noted for its manufactories; *Melrose*, for the fine ruins of its abbey; *Ayr*, as being near the birthplace of the poet, Burns; *Aberdeen*, for its university; *Paisley* and *Pesth* are manufacturing cities.

Dublin is the capital of Ireland. It has some splendid streets, and many beautiful edifices.

Belfast has the largest linen factories in the world. *Cork* has an extensive trade.

Limerick and *Galway* are important sea ports on the west. The following is a list of the principal cities, with their population:

London	3,533,000	Dundee.....	143,000
Glasgow.....	556,000	Newcastle.....	140,000
Liverpool.....	527,000	Hull.....	137,000
Manchester.....	500,000	Portsmouth.....	125,000
Birmingham ..	377,000	Leicester.....	113,000
Dublin	315,000	Sunderland.....	108,000
Leeds	292,000	Brighton.....	101,000
Sheffield.....	275,000	Aberdeen.....	98,000
Edinburgh.....	219,000	Merthyr-Tydvil	97,000
Bristol.....	200,000	Nottingham.....	94,000
Belfast	175,000	Cork	78,000
Bradford.....	174,000		

FOREIGN POSSESSIONS.

34. The following are the leading foreign possessions, together with area and populations:

	AREA.	POPL'N.	
Gibraltar	1.92	18,000	} Europe.
Malta	143	147,000	
Cyprus.....	3,707	150,000	
British India	899,341	191,095,009	} Asia.
Ceylon	24,702	2,756,000	
Hong-Kong.....	32	139,000	
Niobar Isles.....	684	5,500	
Andaman Islands.....	2,508	14,500	
Laccadive Islands.....	744	6,800	} Africa.
Cape Colony.....	199,950	721,000	
Natal.....	18,750	357,000	
Transvaal.....	113,743	40,000	
Sierra Leone.....	1,000	39,000	
Gold Coast.....	15,000	400,000	} Oceania.
Australia.....	2,968,887	2,174,000	
Tasmania.....	26,215	110,000	
New Zealand	104,272	432,000	
Feejee Islands	8,033	112,000	} America.
Canada.....	3,372,000	4,351,000	
Newfoundland.....	40,000	147,000	
Jamaica.....	4,250	558,000	
British Guyana.....	85,425	240,500	
British Honduras	7,562	25,000	
Falkland Isles.....	4,838	1,594	

HISTORY.

35. The kingdom of Great Britain and Ireland includes *England, Wales, Scotland, and Ireland*. These several divisions anciently constituted so many different nations. *Wales* has been attached to England since 1283, A. D.; *Scotland* was united to it in 1707, and *Ireland* in 1800: all these countries finally coming under one legislation. Thus the present *United Kingdom* was formed.

England appears so prominently in the history of the British Islands that, in common language, we often speak of *England* as embracing the whole empire, and of the English as meaning the whole people. England from the first has been the leading kingdom.

The *Phœnicians* and *Carthaginians* were acquainted with these islands, and the former visited them frequently for the sake of obtaining tin. Cæsar

gives the first knowledge of this country. It was known to the Romans by the names *Britania* and *Albion*. The inhabitants called Britons were of the Celtic race.

England was conquered by the Romans, under Julius Caesar, 55 B. C. He describes the Britons as living in scattered villages, on the banks of rivers, and in the midst of forests. Most of them were complete savages, tattooing their skins, and dressing in the hides of cattle.

The southern tribes were more civilized than those of the north. They practiced agriculture in a rude manner.

They had no books, or means of recording events, and were divided into numerous tribes, each having a chief. The Druids were the priests and lawgivers, the chiefs only commanding in time of war. Under the sway of the Romans, towns and castles were built, and London, which was at first a forest, became a rich and populous city. *Caledonia*, now Scotland, was inhabited by Scots and Picts, a wild and warlike people, who made frequent incursions into the territories of the Romans. The Romans never conquered Scotland. Ireland, and some of the Welsh, long continued independent in their mountains. England was under Roman control for nearly 500 years. About the year 440, the Romans were compelled, in order to protect their cities and territories in Italy from barbarians, who began to pour in there, to withdraw their troops from Britain, as well as other remote provinces.

In 448 A. D., a party of 300 *Northmen*, called *Saxons*, led by Hengist and Horsa, landed in Britain. The people suffering under the ravages of the Scots and Picts, asked for their assistance. This was granted, and the enemy was driven back.

The result was that the Saxons obtained the mastery, and divided England into seven kingdoms, called the Saxon Heptarchy, A. D. 559. The *Saxons* were composed partly of a tribe of Angles; whence these invaders, who became the founders of the English people, are called Anglo-Saxons—a name still given to their descendants. They at last quarreled among themselves, and Egbert, King of Wessex, reduced the other tribes. He was accordingly crowned, A. D. 827, King of *Angle Land*, thus establishing the kingdom of England.

Alfred, who received the crown in 871, was one of the greatest kings that ever sat upon the throne of England. He established good laws, encouraged learning, instituted the right of trial by jury, and at last died 901, A. D., loved by his subjects, feared by his enemies, and admired by mankind.

From this period, the history of England flows on in an unbroken current.

It is impossible for us to give even an outline of the history of that country, and the events which have at last rendered it the mightiest empire on the face of the globe. We can only notice a few of the leading incidents.

In the year 1066, the *Monarch line of Kings* was introduced by William, Duke of Normandy. In 1215, the barons of England compelled King John to sign what is called *Magna Charta*, by which the power of the crown was limited, and the liberties of the people in some degree acknowledged and se-

cured. In the reign of Henry VII. occurred the celebrated *War of the Roses*, so called because those attached to the house of Lancaster wore red roses as their badges, and those attached to the house of York wore white roses. In 1534, Henry the VIII. caused the Church of England to be separated from the Church of Rome. In 1605 the celebrated *Gunpowder Plot* took place. In 1649, England became a *commonwealth*, and *Oliver Cromwell* the chief ruler.

ASIA.

MAP EXERCISES.

Locate the following:

RIVERS.—Obe, Yenisei, Lena, Amoor, Amoo, Jordan, Indus, Ganges, Brahmaputra, Cambodia, Irawaddy, Salwen, Euphrates, Tigris, Helmund, Meinam, Syr, Yangtse Kiang, Hoang Ho, Pei Ho, Tarim, Irtysh, Upper Tungouska, Anadyr, Nerbudda, Godavery, Krishna, Sikiang, Tobol, Sungari.

CAPES.—North East, Chelagskoi, East, Lopatka, Cambodia, Comorin, Pt DeGalle, El Had, Fartak, Romania, Negrais.

GULFS AND BAYS.—Obe, Taimyr, Anadyr, Bengal, Tartary, Petchili, Tong King, Persian, Cutch, Cambay, Siam, Aden Suez.

STRAITS.—Behring, Corea, Malacca, Ormuz, Bab-el-Mandeb, Formosa.

ISLANDS.—Ceylon, Formosa, Hainan, Saghallen, Kiusiu, Nippon, Sikoke, Jesso, Nicobar, Andaman, Maldive, Laccadive, New Siberia, Kurile, Wrangel Land, Loo Choo.

MOUNTAIN RANGES.—Zagros, Himalaya, Karakorum, Kuenlun, Thian Shan, Altai, Eastern Ghauts, Western Ghauts, Vindhya, Elburz, Labanon, Taurus, Ural, Hindo Koosh, Suleiman, Yablonoi, Stanovoi, Gr Khingan, Peling, Yunling, Nanling.

MOUNTAIN PEAKS.—Everest, Dhawalagiri, Kanchinjanga, Dapsang, Blelucha, Fusi-yama, Koriask, Sivelutch, Sinai, Carmel, Olives, Ararat, Kasbek, Elbrooz.

DESERTS.—Gobi, Thurr, Dahna, Syrian, Iran, Deccan, Pamir, Kirghiz, Tundras.

LAKES.—Balkash, Baikal, Zaisan, Tengri, Issik, Tungting, Poyang, Lop, Van, Salumeh, Urumiah, Bosting, Tiberias, Hamoon.

TOWNS.—Mecca, Medina, Muscat, Mocha, Jerusalem, Beyroot, Irkoutsk, Nikolaiefsk, Tashkend, Tobolsk, Khiva, Bokhara, Teheran, Bushire, Kelat, Cabool, Scutari, Smyrna, Trebizond,

Damascus, Palmyra, Bethlehem, Er Riad, Nankin, Hangchow, Shanghai, Ningpo, Foochow, Amoy, Canton, Macao, Hong Kong, Lassa, Yeddo, Miako, Osaca, Yokohama, Nagasaki, Calcutta, Bombay, Madras, Benares, Agra, Lucknow, Delhi, Calombo, Bangkok, Mandelay, Rangoon, Singapore, Saigon, Meshed, Antioch, Hue, Hakodadi, Ispahan, Cashgar, Kandahar, Bagdad, Pekin.

COUNTRIES.—China, Japan, Persia, Arabia, India, Afghanistan, Beloochistan, Turkistan, Thibet, Turkey, Hadramaut, Oman, Yemen, Hedja, Syria, Ne ljed, Mongolia, Corea, Siam, Anam, Cochin China, Manchooria, Napal, Bhotan.

MISCELLANEOUS.—What capitals are near the 40° of lat.? What important cities on or near the Tropic of Cancer? What place in Asia has the longest day? What part of Asia has midnight when it is noon at Washington? What capitals near the meridian opposite to Washington? What bodies of water and what countries are crossed by the 50th meridian east longitude? By 70° ?

RELATIVE POSITION.—In what direction is Ceylon from Arabia? from Lake Balkash? Gulf of Cutch? Pekin? Japan from Kamtchatka? Anam? Arabia? Tobolsk? Philippine Islands? Hue from Mecca? Ceylon? Jerusalem?

TRAVELS.—What countries would you cross in traveling by land from Arabia to Farther India? to Liberia? to China? from Bushire to Cashgar? to Hue? to Smyrna? to Mecca? On what bodies of water would you sail in going from Pekin to Bushire? to Calcutta? to Constantinople? to Nicolaieff? to Bangkok? from Rangoon to Yokohama? to San Francisco? to New York? to London? to Vienna? to Muscat? to Vera Cruz?

DESCRIPTION.

POSITION.

1. (1) It is bounded on the north by the Arctic ocean and Europe, on the east by the Pacific, on the south by the Pacific and Indian oceans, and on the west by Europe, the Mediterranean and Red seas, and the isthmus of Suez.

(2) Latitude and Longitude. In latitude it extends from 1° north to 78° north, and in long. from 26° east to 170° west of Greenwich.

EXTENT.

2. Its greatest length from east to west is 7,600 miles and greatest breadth 5,160 miles. Area 17,100,000 square miles, or one third of all the land of the globe.

Distance from Constantinople to Babylon,.....	1,000 miles
“ “ “ “ River Indus,.....	2,300 “
“ “ “ “ Jerusalem,.....	700 “
“ “ “ “ Mecca,.....	1,200 “
“ “ “ “ Tobolsk,.....	1,800 “
“ “ “ “ Nippon,.....	5,000 “
“ “ “ “ Babylon to Ninevah,.....	250 “
“ “ “ “ Mouth of Ganges,.....	2,600 “
“ “ “ “ Jerusalem,.....	420 “
“ “ “ “ Constantinople,.....	1,000 “
“ “ “ “ Greece,.....	1,500 “
“ “ “ “ Rome,.....	2,500 “

GENERAL OUTLINE OF THE COAST.

3. The coast of Asia is very irregular, abounding in large inlets and correspondingly large projections. Many *fine harbors* exist. It has more than 33,000 miles of coast line or one mile to every 528 square miles of surface.

CAPE.

4. The most northern cape is Northeast cape; the most eastern cape is East cape; the most southern, Cape Romania; Comorin projects from the south of India, etc. (The pupil may supply or add other capes, giving their location.)

GULFS AND BAYS.

5. The Gulf of Obe is in the northwestern part of Siberia and is tributary to the Arctic Ocean. *Petchili* gulf is in the Yellow sea. It receives the Pei Ho and Hoang Ho rivers. The *Persian* gulf lies between Persia and Arabia and is an arm of the Arabian sea. It receives the Shat-el-Arab, formed by the confluence of the Euphrates and Tigris rivers. (Let the pupil locate other gulfs and bays in the same manner.)

The following list gives the dimensions and approximate areas of some of the inlets of Asia:

NAME.	LENGTH.	BREADTH.	APPROX. AREA.
Persian Gulf.....	550 mi.	220 mi.	100,000 sq. mi.
Petchili.....	150 “	150 “	20,000 “ “
Obe.....	480 “	160to 200 “	75,000 “ “
Tonquin.....	300 “	150 “	40,000 “ “
Siam.....	500 “	300 “	120,000 “ “
Bengal.....	1,200 “	800 “	750,000 “ “

SEAS.

6. Thirteen seas border upon Asia; besides these are a number of inland seas. The *Red* sea west of Arabia received its name from the color of its waters owing to microscopic plants existing in the water.

SEAS.	LENGTH.	BREADTH.	AREA.
Yellow	620 mi.	400 mi.	200,000 sq. mi.
Caspian	760 "	270 "	240,000 "
Aral	265 "	145 "	24,500 "
Dead...	41 "	8 1/2 "	489 "
Red	1,450 "	80 to 200 "	185,000 "
Japan.	600 "	500 "	200,000 "

The Dead sea is 1,278 feet deep, and the Red, 600.

CHANNELS, STRAITS, ETC.

7. The strait of Bab-el-Mandeb separates Arabia from Abyssinia and connects the Red sea to the Gulf of Aden; Behring's strait separates North America from Asia and connects, etc.

NAME.	WIDTH.	LENGTH.
Bab-el-mandeb..	20 miles.	
Malacca	25 "	520 miles.
Ormuz..	30 "	150 "
Yesso	12 "	
Formosa	90 "	
Behring's	36 "	
Tartary	50 to 200 "	400 "
Corea.	120 "	

ISLANDS.

8. Many of the islands of Asia are important. The following are the principal:

NAME.	L'TH.	BR'DTH	AREA.	POP'TION.	PRODUCE AND REMARKS.
Formosa..	245 m	100 m	11,982	3,090,000	Wheat, rice, sugar cane, petroleum, figs, oranges, peaches, and sulphur.
Hainan.	200 "	115 "	12,000	1,000,000	Timber, pearl, wax, coral, and salt.
Ceylon	271 "	137 "	24,700	2,407,000	Coffee, plumbago, cinnamon, tobacco, rice, gold, and iron.
Loo Choo	65 "	15 "		167,000	Provisions, live-stock, tin, copper, salt, and sulphur.
36 Isles					
Andaman.			2,550	13,500	Sterile soil, and inhabited by a very degraded race of savages.
9 Isles					
Nicobar..			1,260	6,000	Tobacco, sugar, cocoa-nuts, oranges, and bamboos.
N'wsiberia	75 "	30 "			Curious vegetable and animal fossil remains. Sterile, frozen region.
Saghatlen..	514 "	17 to 28 "	47,500	13,000	Lignitic coal. Severe climate.
Jesso	290 "	215 "	62,500	120,000	Wheat, rice, hemp, tobacco, fruits, and dried-fish. Volcanic.
Nippon	900 "	280 "	80,000	25,156,009	Tea, rice, cotton, sugar, and fruits.
Japan, 3859			155,500	33,110,000	Silk, tea, Japanese ware, and fish.

PENINSULAS.

9. Arabia, Hindoostan and Farther India are the leading peninsulas. Corea is 600 miles long and 130 wide and contains 8,000 square miles. It has a cold climate and is noted for its breed of dwarf horses three feet high.

Kamtschatka is a volcanic projection from Siberia. Its climate is cold and soil sterile. Asia Minor is the easternmost projection of Asia, and is an extensive region.

PENINSULAS.	LENGTH.	BREADTH.	AREA.
Arabia.....	1,400 miles.	800 miles.	920,000 sq. mi.
Hindoestan.....	1,870 "	1,575 "	1,280,000 " "
Farther India.....	2,000 "	1,200 "	" "
Kamtschatka.....	800 "	280 "	200,000 " "
Corea.....	600 "	135 "	80,000 " "
Asia Minor.....	790 "	420 "	270,000 " "

GENERAL CHARACTERISTICS OF THE SURFACE.

10. The physical features of Asia are grand and remarkable. In the center is an immense plateau, consisting of naked mountains, enormous rocks, vast deserts and plains.

In these elevated regions, the great rivers which flow north into the Arctic ocean, or south and east into the Indian and Pacific oceans, have their sources. Here, also, the chief ranges of mountains in Asia form a stupendous rampart from which others branch out and extend over the country. Here are the lofty *Himalayas*, the most gigantic pile of rock on the globe, many of whose colossal peaks are almost lost to sight as they seem to penetrate the sky itself.

The *Altai* mountains separate the great Siberia and its cold from central Asia.

11. The following table exhibits the names of the principal mountain ranges with their mean height.

NAME.	MEAN HEIGHT.
Himalaya ("the abode of snow,").	16,000 to 18,000
Altai (i. e. Golden Mountain).....	8,000
Lebanon ("the white mountain").....	7,000
Thian Shan (celestial mountain).....	18,000
Kuenlun.....	18,000
Hindoo Koosh.....	18,000
Karakorum.....	18,000 to 19,000
Taurus.....	9,000 to 19,000
Ghaut's Eastern.....	3,000 to 19,000
Ghaut's Western.....	5,000 to 19,000

MOUNTAIN PEAKS.

12. Many of the peaks of Asia are interesting because of the historical incidents connected with them. Near the Isthmus of Suez is Mount *Horeb*, upon which God appeared to Moses and commanded him to deliver his countrymen; and Mount *Sinai*, upon which he gave the law. Mount *Ararat* is in Armenia, upon which the ark is supposed to have rested after the flood. Mount *Herman*, in the north of Palestine, is associated with the division of the promised land among the twelve tribes of the children of

Israel, and Mount *Harmel* is where the prophet Elijah triumphed over the priests of Baal.

NAME.		NAME.	
Nanda Devi.	25,662 feet.	Sinai.	2,300 feet.-
Everest.	29,000 "	Carmel.	1,500 "
Dhawalagiri.	26,826 "	Herman.	11,000 "
Kanchinjanga.	28,156 "	Ararat.	17,300 "
Dapsang.	28,278 "	Kasbek.	16,545 "
Fusiyama.	14,177 "	Elbrooz.	18,570 "
Nebo, or Pisgah.	2,700 "	Horeb.	8,593 "
Koriask.	10,000 "	Adams.	7,380 "

Asia has few volcanoes, though its islands are crowded with them.

PLAINS, ETC.

13. Notwithstanding the enormous elevation of Asia, it is a flat country, consisting of a prodigious plain whose mean elevation is not more than 1,150 feet. All of that vast tract northwest of the Thian Shan and north of the Altai has a mean elevation of 200 to 1,200 feet. Much of the southern part is flat. The table lands of Asia, like all its other physical characteristics, are gigantic.

The *Pamir Plateau*, sometimes called the "*roof of the world*," is 16,000 feet above the sea-level and is the highest plateau on the globe. From this all the principal mountain chains diverge.

Gobi ("sea of sand") is an extensive sandy plain in the northern part of the Chinese empire; it contains a few oases; a portion of it is supposed to be the depression of a large inland sea now dried up. Its average elevation is 3,000 feet, and is 1,200 miles long and from 500 to 700 broad.

The *plateau of Iran*, occupying 170,000 square miles, has a mean elevation of 4,000 to 7,000 feet. *Thibet* contains 760,000 square miles and is 15,000 feet above sea-level. Other important plains are as follows: Thurr, Dahna, Syrian, Deccan.

OBJECTS OF INTEREST.

14. Asia is one of the most interesting parts of the world. Here our first parents were created, here was the paradise of Eden, and from thence the whole human family is supposed to have spread. Here nearly all the scenes and events of the Bible transpired. Its *historical features* will always make it interesting.

There are many fine landscapes and sublime places among its mountains and rivers, but these do not form its chief attraction. The Holy Land, the ruins of Babylon and Ninevah, and other places are visited by thousands yearly.

The "*wall of China*" is one of the greatest works of ancient times. It is 1,250 miles long, 15 to 30 ft. high, 25 feet wide at the base and 15 at the top. Towers occur every 300 feet. It

was built 215 years B. C., and employed several million men five years in its construction.

LAKES.

15. The lakes of Asia are not numerous and are mostly small in size, and with but few exceptions are salt.

NAME.	LENGTH.	BREADTH.	AREA.	REMARKS.
Baikal	397	45	12,500	{ 1,309 feet above sea-level. Frozen from Nov. to April. Scene of volcanic action.
Balkash	345	55	17,000	{ Shallow and is surrounded by uninhabited country.
Issik			2,406	{ 5,300 feet above sea-level.
Hamoon	70	15 to 20	1,200	{ Eastern part shallow; increasing in size.
Poyang	80	40	2,500	
Tungting				
Van	70	50	2,000	{ (Salt.)
Urumiah	70	20	1,800	{ Its water is very salt.

RIVERS.

16. The southern and northern portions of Asia are well watered. The central portion is wanting in rivers of note. The following are the principal:

NAME.	LENGTH.	AREA OF BASIN.	MILES OF NAV'GON	REMARKS.
Lena	2,400	800,600	800	
Hoang Ho (Yellow)	2,700	714,000		{ Rapid and turbulent, because of its destructive effects it is called 'China's Sorrow.'
Yangtse Kiang	3,000	950,000	700	{ This is the most beloved by the Chinese and is called "Son of the Ocean."
Pei Ho	900			{ (1) This river is said to have 80 mouths.
Ganges	1,960		1,500	{ (2) It rises 13,000 feet above sea-level; receives 11 tributaries larger than the Rhine. Its annual overflow begins about the 1st of May and continues till April. The bore rushes up the river 18 miles per hour.
Obe	3,000			{ Fish are very abundant.
Yenisei	2,500	1,000,000		{ It is of great breadth but flows through a frozen region.
Amoo	1,300			{ A rapid and broad stream. Largely used for irrigation. Lower part navigable.
Amoor	1,500		1,500	{ Changes its course frequently.
Brahmaputra	1,800			{ Navigable its entire length except winter.
Cambodia	1,800			{ Overflows its banks annually.
Jordan	200			{ Contains much fine scenery.
Irawaddy	1,200			{ It has many cataracts. Its valley is about 5 miles wide, hemmed in by precipices.
Euphrates	1,800		1,195	{ From 1 to 4 miles wide. Its delta contains 10,000 square miles.
Tigris	1,150		295	{ In some places it has lofty and precipitous banks.
Indus	2,000			{ Rafts supported by inflated skins are used in navigation. Flows through a mostly sterile region.
Tarim				{ An extremely muddy stream; it discharges 150,212,979,000 tons of earth each year. It is broad and shallow, and shifting sand-bars obstruct navigation.
Nerbudda	620			{ Empties into Lop Lake.
				{ It is a broad stream, but navigation is impeded by shallows and rocks.

SOIL.

17. But little more than *one-third* of Asia is tillable land. Nearly all of Siberia is a frozen plain. *Arabia* and all that vast region

of Asia lying south of the Caspian and Aral seas and the Altai mountains and north of the Himalayas, has for the most part a poor soil. Portions of India are unfit for cultivation. But the greater part of India, Farther India and China proper, are very fertile. Many of the *river valleys* are highly productive and are well filled with a busy population.

CLIMATE.

18. Asia, from its vast extent, stretching from the Arctic regions almost to the equator, possesses every variety of climate. In *Siberia* the cold is intense. North of 56° north latitude the ground is always frozen.

A temperature of 90° below zero is an annual occurrence. In the north the temperature averages 1 degree above zero, the *second coldest place* in the world.

In *Central Asia*, upon the lofty table lands, the climate is cold because of the great elevation.

On the *Persian Gulf* the heat becomes extreme, the thermometer sometimes reaching 125 degrees in the shade.

Mecca is regarded by some as the *hottest place* on earth, owing to the bleak rocks behind reflecting the heat of the sun.

The *monsoons* occur in south-eastern Asia; they blow from the south-west from April to October, and from the north-east from October to April.

The changing of the monsoons is often accompanied by violent storms of thunder and lightning.

There are many *rainless regions* in the interior. The great mountains on the south prevent the south winds laden with moisture, from distributing their rains on the interior.

The *greatest rainfall* in the world occurs just south of the Himalaya mountains; 610 inches fall on an average annually. The average rainfall of the peninsula of Hindoo-tan is 117.5 inches; of Ceylon 91.7 inches; of Canton 69.2 inches.

VEGETATION.

19. The vegetation is greatly diversified from the creeping lichens of the north to the splendid productions of the equatorial regions. Many of the finest cultivated *flowers* in Europe and America had their origin here. The *forests* abound in useful woods, including the far famed cedar of Lebanon, the teak, the cypress, &c.

Among the *Aromatic plants* are the cinnamon, camphor and cassia.

Among the *fruits* besides those common to our climate are the orange, lemon, pomegranate, tamarind, &c. A large portion of

our *choicest garden flowers* are also from Asia. The grape, sugar cane, cotton, wheat, rye, oats, barley and millet are all *indigenous* to this quarter of the globe and are largely cultivated.

Tea is little produced but in Asia, and the finest coffee in the world is the product of Arabia.

In Persia large *fields of roses* are cultivated from which is obtained the "*Ottar of Roses*." Various gums and spices are obtained in western Asia.

MINERALS.

20. The mineral treasures of Asia include the finest precious stones, gold, silver and other metals. *Diamonds* are found in Deccan, Ceylon, Ural mountains and other places. *Gold* is most abundant in the Altai mountains.

Silver is obtained in China, Anam, Siberia, Japan and western Asia. *Tin* in the Malay peninsula, China, Japan, and some other islands.

Copper and *iron* in Siberia, Japan, Hindoostan, Anam, Persia, Thibet and Turkey.

Coal and *Petroleum* have been discovered in China and Bengal, but the inhabitants have never utilized them to any extent.

Marble of great beauty exists in Persia, some of which is so transparent that it is used for window lights.

We know but comparatively little of the mineral wealth of Asia and our knowledge of its distribution is yet very imperfect.

ANIMALS.

21. The animal kingdom is greatly varied. Here are found not only beasts and birds common to Europe, but the rhinoceros, elephant, tiger, wild-hog, yak, gazelle, hyena, tapir, wolf, ox, buffalo, goat, sheep, wild ass, monkey, ostrich etc., are natives of Asia. Here, also, is the *original home* of the horse, the camel, the pheasant, the bird of Paradise, and the peacock as well as that of our common barn-yard fowls. In south-eastern Asia, birds of the most gorgeous plumage abound.

MANUFACTURED PRODUCTIONS.

22. The *Chinese* and *Japanese* are the principal states engaged in manufacturing. They excel in the manufacture of silks, laces, satins, linens, cottons and pottery.

The *Persians* make the finest shawls and carpets in the world.

The Asiatics know but little about the use of machinery. In fact, they have a kind of natural repugnance to modern inventions, which makes it very difficult to introduce the improved tools and machinery of the more civilized nations of Europe and America. However, the *skill* with which they do their work is truly wonderful.

Nearly *every article* of manufacture is made by hand or with the rudest tools. Very *fine sword blades* are made in Persia and Japan.

Calico is said to have been made first at Calicut on the southwestern coast of India, whence it derived its name.

The *Chinese* and *Japanese* work extensively in *carving ivory*, wood and stone, and in engraving, but without any design. The art of *painting* was known to the Chinese as early as the 10th century, A. D.; they also *invented* paper, gunpowder, the compass, and other useful articles.

COMMERCE.

23. The *commerce* of Asia is considerable. It is carried on chiefly with Great Britain, Japan, East India and the United States. The Asiatics own but few large vessels. The chief *sea-port* of China is *Shanghai*. Its commerce amounts to more than all the other ports combined. *Tokoham* is the chief port of Japan, and Calcutta of India; Mecca, Smyrna, Saigon, Rangoon, Madras and Bombay are also very important ports.

The *leading exports* are raw silk, silk piece goods, tea, sugar, mats, matting, Chinaware, rice, coffee, drugs, spices, aromatics, precious stones, etc.

The *imports* are opium, cottons, woolens, raw cotton, metals, coal and ginseng.

The following table exhibits the commercial state of the principal Asiatic countries:

COUNTRIES.	EXPORTS.	IMPORTS.	WITH THE U. S.	
			EXPORTS.	IMPORTS.
China...	\$ 135,000,000	\$ 117,000,000	\$ 18,000,000	\$ 1,600,000
Japan, ...	23,000,000	35,000,000	6,500,000	1,800,000
Persia,	10,000,000	11,000,000		
British India,	370,000,000	311,000,000	15,000,000	10,000,000

NATURAL ADVANTAGES.

24. The agricultural advantages have been noted under *soil* and *climate*. The *commercial facilities* are excellent along the coast, and many of the rivers are navigable; but in this respect it is still far surpassed by Europe and America. Owing to the great size of the continent, large portions of the interior are situated so far from the sea as to be almost entirely cut off from the advantages of oceanic commerce. Its *lakes* are few and for the most part are unimportant as highways of trade.

The *interior* is *ill* adapted to manufacturing: (1) for want of water power, (2) for want of transporting facilities. There is an abundance of minerals, and this would be favorable if other conditions were not wanting. Hence, the *manufacturing* interests can be well developed only along the coast.

INTERNAL IMPROVEMENTS.

25. There are *numerous canals*, especially in China, the *imperial*

canal, 650 miles long, is one of the largest canals in the world.

In 1878 there was but one *railroad* in China and that was purchased by the government and destroyed because of blind superstition. The *popular feeling* in regard to railways has changed, and there is now a desire for railroads. There are now several short roads in various parts of China and other countries of Asia.

Of late years Japan has made great progress in adopting the manners and customs of Europe and America. Railroads, post-offices, telegraph lines, improved machinery have all been quite recently introduced, and are now found in all parts of the empire. *Schools* of high order have been established and supplied with teachers from Europe and the United States. The outlook for Asia is favorable.

RACES.

25. Three races occupy this Grand Division. The *Caucasians* occupy the western part and India. The *Mongolians* the eastern, and the *Malays* the Malay Peninsula. There are many *Jews* in Turkey and Arabia.

NUMBER OF INHABITANTS.

COUNTRIES.	AREA.	POPULATION.
Siberia,	6,200,000 sq. m.	11,500,000
Turkistan,	106,000 " "	2,730,000
Turkey,	743,000 " "	17,880,000
Arabia, " west," or " merchandise traffic,"	968,000 " "	3,700,000
Persia,	636,000 " "	6,000,000
Afghanistan,	279,000 " "	4,000,000
Beloochistan,	107,000 " "	350,000
India,	1,577,000 " "	252,000,000
Birmah,	190,000 " "	4,000,000
Anam,	198,000 " "	21,000,000
Siam,	309,000 " "	5,750,000
Chinese Empire, (" the middle nation,")	4,560,000 " "	434,500,000
Japan, " root of day," or " sunrise nation"	146,000 " "	34,338,000

OCCUPATION.

27. The people are chiefly engaged in *Agriculture*, though their mode is rude.

The Emperor of China, to show homage to this pursuit, once each year, with his own hand plows a furrow.

Manufacturing is extensively carried on by the Chinese and Japanese. The *fisheries* are important. The pearl fisheries on the southeast coast and on the islands are found to be profitable, and employ many people.

Mining is not pursued very extensively, though minerals of all kinds are abundant.

LANGUAGES.

28. Quite a number of languages and dialects (937) are spoken in Asia; the *Chinese* language is spoken by one-half the whole population.

There is the same written language throughout the Chinese Empire, but nearly every province speaks its own dialect. There is a character for each word, and in reading a Chinese book you begin at the bottom and read toward the top. The language of the Chinese, like their customs, is the same as it was 2000 years ago.

In the English colonies the English language is extensively used and bids fair to become the dominant language of Asia.

The Russian tongue is used largely in Siberia. There are, also, some other European tongues spoken in various parts, but to a limited extent only.

GOVERNMENT.

29. There are *six independent governments* in Asia, all of which are absolute monarchies, viz.: China, Japan, Anam, Birmah, Siam and Persia. *Siberia* belongs to Russia. *Turkey* and *Arabia* are chiefly subject to Turkey in Europe.

In some places there are roving tribes under no permanent government, and are not recognized among the governments of the world.

The French own a small tract in the southern part of Farther India. The remainder of Asia is subject to the English.

EDUCATION.

30. Excepting Japan, but little progress is made in education. Throughout the *Chinese Empire* there is great respect paid to letters, but their literature, science and arts have remained fixed for ages. *Day schools* are common. The government appoints boards of examiners, but otherwise does not assist in the education of the people.

In general the *masses* are *very ignorant*, and in Western and Southern Asia, the condition of the people in most places is degradingly low.

RELIGION.

31. The religions of Asia may be divided into three classes: *Budhism* in China and Japan, *Brahminism* in India, and *Mohammedanism* in western Asia. There are about seven and one-half millions of the Greek Church, four and one-half millions of the Roman Catholic, and five hundred thousand Protestants. Nearly every educated Chinaman is an atheist. Many *missionaries* of different denominations are laboring in many parts and converting great numbers.

CITIES.

32. The large cities of Asia are numerous and many of them important. In most cases the cities have narrow, crooked, unpaved and undrained streets. The stench is often horrid and disgusting. Nearly all the important cities are enclosed by walls, in which are gates guarded by sentinels.

Peking (500,000 inhabitants) consists of two cities, twenty-five miles in circuit and whose walls are thirty feet high and twenty-five feet thick, and have sixteen gates.

Canton (1,500,000 inhabitants) is one of the oldest cities in China. The streets are very narrow, on an average seven to eight feet wide. There are no wheel-carriages. It is frequented by a prodigious number of boats, sometimes amounting to 100,000 at one time.

Foo Chow (600,000) has extensive manufactures of cottons and porcelain. Valuable lead mines exist in its vicinity.

Nankin ("Mouth of Commerce") is situated 700 miles from the mouth of the Yangtse Kiang. Its population is variously estimated from 500,000 to 8,000,000.

Shang Hai, a seaport of China, numbering 250,000 inhabitants. It is extensively engaged in the manufacture of silks, muslins, glassware, paper and artificial flowers. It has three daily and two weekly English newspapers.

Hong Kong (160,000) is a seaport of China. It belongs to the British. Other cities of Asia are

CITIES.	POPULATION.	REMARKS.
Ningpo,.....	120,000	Manufactures carved goods, embroidery, Jewelry, etc.
Kashgar,.....	70,000	It exports brick, tea, silks, porcelains, etc.
Nankin,.....	500,000	Contains many objects of great interest.
Tientsin,.....	930,000	It is a great entrepot for salt.
Yeddo,.....	780,000	The capital of Japan.
Yokohama,.....	62,000	The seaport of Yeddo.
Osaka,.....	530,000	It has 1,100 bridges and 1,990 places of worship.
Kioto,.....	567,000	Literary center, manufactures porcelain, silks, cutlery.
Hakodadi,.....	112,000	Deep and spacious harbor; little commerce.
Nagasaki,.....	70,000	Extensive trade in pottery.
Bangkok,.....	630,000	(Indo-China), situated in a marshy, but healthy region. Manufactures fire-crackers.
Hue,.....	100,000	Strongly fortified in the European style.
Saigon,.....	90,000	Regularly built and strongly fortified.
Mandelay,.....	90,000	It has palaces, pagodas and convents.
Singapore,.....	56,000	"City of the Lion," an important commercial city.
Calcutta,.....	892,000	(Indo-British), seat of an immense trade, and capital of British-India.
Bombay,.....	644,000	Has a large Hindoo library and several scientific schools.
Madras,.....	398,000	Stores and public offices are imposing structures.
Delhi,.....	155,000	It contains the palace of the Great Mogul, the most remarkable in India, and the celebrated Jamma Mosque.
Lucknow,.....	285,000	Celebrated for its handsome palaces, mosques and tombs.
Coombo,.....	97,000	Capital; principal commercial emporium of Ceylon.
Cashmere,.....	51,000	It is picturesque in situation, and is widely celebrated for its shawls, silks, rose ottar, and floating gardens on the lakes near by.
Benares,.....	175,000	The religious capital of the Hindoos.
Pannia,.....	158,000	Contains fine churches and mosques.
Cabool,.....	60,000	Capital of Afghanistan.
Kelat,.....	45,000	Capital of Beloochistan.
Mecca,.....	45,000	Supposed to contain the well from which Hagar obtained the water for Ishmael.
Museat,.....	35,000	It is visited annually by 100,000 to 200,000 pilgrims. It is the birthplace of Mohammed.
Jerusalem,.....	25,000	It is near the Dead sea, and was formerly the capital of the Jewish people.
Smyrna,.....	100,000	An important town on the Mediterranean.

Other cities are as follows :

CITIES.	POPULATION.	REMARKS.
Medina,	20,000	Contains the tomb of Mohammed.
Beyroot,.	100,000	Celebrated for its remains of antiquity.
Khiva,.	6,000	One of the Capitals of Turkistan.
Bokhara,	30,000	It has 335 mosques of great architectural beauty and 80 colleges. The seat of Mohammedan learning.
Teherran,	100,000	Very unhealthy.
Bushire, ..	20,000	Built of white stone and presents a fine appearance.
Trebizond, .	10,000	An important seaport on the Black sea.
Er Riad, ...		
Bagdad, .	40,000	Noted for its many slaves and white donkeys.
Damascus, .	150,000	Beautiful situation. The oldest existing city in the world, founded 2000 years B. C.
<i>Siberia</i>		
Tashkend, .	80,000	
Tobolsk, .	17,000	Streets regular, and the city presents a fine exterior.
Tiflis, ..	70,000	
Kiachta, .	1,000	

HISTORY.

We are entirely indebted to the Bible for the history of the early ages of the world. The Creation, which consisted in a new arrangement of the seas and continents of the earth, with the production of races of animals and vegetables, took place many thousand years ago.

Adam and *Eve* were the first human pair, and from them have sprung all the nations of the earth. The descendants of Adam, living in Western Asia, and probably in the valley of the Euphrates, increased rapidly, and spread over a great extent of country.

They became very wicked, and in the year 2348, B. C. they were all destroyed by a *Flood*, or *Deluge*, with the exception of Noah and his family, who were saved in the ark. The descendants of Noah again peopled the valley of the Euphrates, where they undertook the construction of an immense edifice, called the *Tower of Babel*.

In the midst of their work, a strange confusion of languages occurred, so that the artisans could not understand each other. This led to a dispersion of a large portion of the people. Some migrated westward, and settled in Egypt and Europe; some proceeded eastward, and established themselves in China and other countries, and at last, in America. Still multitudes remained in the Euphrates; and here the Empire of Assyria was founded 2221, B. C. Its capital was *Nineveh*, situated on the eastern side of the Tigris. Assyria became an immense empire, and conquered the surrounding countries, including the great city of Babylon, on the Euphrates, about 250 miles south of Nineveh. In the year 536 B. C., Babylon, Assyria, and all the surrounding countries, were conquered by Cyrus, king of Persia. In the year 331 B. C., Alexander of Macedon, conquered Persia and the greater part of Western Asia.

In a short space of time his empire was broken up, and the various countries of Western Asia became distributed among different sovereigns. The

Romans got possession of these territories, and their dominions passed to the Greek empire. In the sixth and seventh centuries, A. D., most of these were wrested from it by the Saracens. In the twelfth and thirteenth centuries, the Turks became masters of this portion of the world, which they retain at the present day. The history of northern and eastern Asia is less interesting. Nearly one-half of the territory, including Siberia and Tartary, called *Scythia* by the ancients, has continued, from the first dawn of history to the present time, to be occupied by various tribes; some of them nomadic, or pastoral, and living upon their flocks; and others warlike, occasionally bursting their boundaries, and carrying destruction and desolation over the more southern and western portions of the continent. From these regions have issued those terrific conquerors, Zingis Kahn, in the thirteenth century, and Timour, or Tamerlane, in the fourteenth century.

China has continued, from age to age, with less change than any other kingdom on the face of the globe. The countries of Fartherther India were not known to the ancients, and their modern history only is preserved. In general, it may be remarked that not only the human race, but the great religions, and the various institutions of society, connected with government and law, had their beginning in Asia, and have thence been spread over the world.

ANCIENT GEOGRAPHY.

The term Asia was originally applied only to the western portion of Turkey, now called Asia Minor. The whole of eastern and northern Asia was unknown to the Greeks, who were not aware of the existence of such a country as Hindoostan, till the conquest of Persia by Alexander.

CHINESE EMPIRE.

MAP EXERCISES.

GULFS.—Tonquin, Pechili.

SEAS.—China, Blue, Japan.

STRAITS.—Formosa, Hainan, Corea.

ISLANDS.—Hainan, Formosa, Loo-Choo.

MOUNTAIN RANGES.—Himalaya, Karakorum, Kuenlun, Thian Shan, Altai, Nanling, Yunling, Great Khingan.

MOUNTAIN PEAKS.—Everest, Dapsang, Nandi Devi, Dhawala-giri, Kanchinjanga, Blelucha.

LAKES.—Tungting, Poyang, Lop, Bosting.

RIVERS.—Pei Ho, Hoang Ho, Yangste Kiang, Amoy, Sungari, Tarim, Sikiang, Brahmaputra.

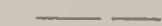
CITIES.—Pekin, Nankin, Hangchow, Shanghai, Ningpo, Foo-chow, Amoy, Canton, Hong Kong, Lassa, Tientsin.

RELATIVE POSITION.—In what direction is Pekin from Hong Kong? from Lassa? from Saigon? from the Loo-Choo Islands? Nankin from Shanghai? from Amoy? from Pekin? from Lassa?

TRAVELS.—Trace a water route from Pekin to Nankin to Canton; to Saigon; to Calcutta; to Yokohama.

MISCELLANEOUS.—What time of day is it now in Pekin? What is the difference between the length of this day at Hong Kong and Pekin? What part of China is crossed by the Tropic of Cancer? By the scale of miles, what is the distance from Nankin to Pekin? to Hong Kong? to Lassa? to Calcutta? to Kashgar? Measure the distance from Pekin to Columbus on the parallel; from Shanghai to New Orleans. What is the altitude of the sun to-day, at noon, in Pekin?

DESCRIPTION.



POSITION.

1. China is bounded on the north by Siberia; on the west by Siberia, Turkestan, and India; on the south by India and the China sea; and on the east by the China sea, Blue sea and Japan sea.

LATITUDE AND LONGITUDE.

2. It extends from 18° to 53° north, and from 86° to 136° west.

EXTENT.

3. The greatest length is 3,350 miles, and greatest breadth 2,100. Area of the whole empire 4,560,000 square miles. China Proper is variously estimated at from 1,298,000 to 200,000,000 square miles. It will be seen, that it has as area about seven to eight times as large as France, or one-half of Europe.

CHARACTERISTICS.

4. This empire is remarkable for its great antiquity, its vast extent, and its immense population. It includes China Proper, Thibet, Manchooria, Mongolia, Turkistan and Corea.

COAST.

5. The coast of China, measuring 2,500 miles, is broken by few inlets setting deep into its sides; yet it is by no means regular. From Hainan to the Yangtse Kiang it is bold and rocky.

Many fine harbors exist. The coast is frequently visited by storms of terrific violence.

ISLANDS.

6. *Hainan, Formosa*, and the *Loo-Choo Islands* are the largest. They are quite populous.

SURFACE.

7. Only a little more than one-third of China is fit for cultivation. Nearly all that extensive region outside of China Proper is a desert waste. The whole country slopes gradually from the Plateau of Thibet to the Pacific. The surface is mostly uneven, and in many places quite mountainous.

MOUNTAINS.

8. The *Himalaya* are on the southwestern boundary, and the *Altai* on the north. The *Tungling* and *Peling* cross the country longitudinally. These ranges throw off numerous spurs which cross the country in various directions, and divide it into a number of almost isolated sections.

NATURAL CURIOSITIES.

9. Owing to our limited acquaintance with China, we are unable to give many natural objects of interest. The lakes, though small, are said to abound in some very fine scenery. The inhabitants themselves are almost the greatest curiosities. Their modes are so different from ours that they are a source of no little interest and amusement.

Among the objects of interest, the "*Great Wall of China*" ranks pre-eminent. It is the greatest work of defense ever erected by man, and was built as a bulwark against the invasions of the Tartars, about 215 B. C. Its length is 1,250 miles, 15 to 30 feet high, and a breadth such that six horsemen can ride abreast on it. In some places it is nothing more than a heap of gravel, while in others a solid foundation of granite.

LAKES.

10. The principal lake in China is the *Tungting*, 220 miles in circumference. *Poyang* is not far distant from *Tungting*, and is 90 miles long and 20 miles wide.

There are many lakes in Central China, the principal of which are *Lop* and *Bosting*. They are salt, and like all the lakes of China, shallow.

RIVERS.

11. The rivers of China are in proportion to the size of the country. The *Yangste Kiang* and the *Hoang Ho*, or *Yellow* are the principal streams. They have their sources near each other

in western China, but are far separated in their middle course, after which they again approach each other. The *Pei Ho* and the *Sikiang* are also large rivers and important routes of trade. The *Hoang Ho* is not navigable on account of the shallows. It is subject to disastrous floods, causing great loss of property and even life, and is for this reason called "China's Sorrow."

The *Yangste Kiang* is a noble river, the most beloved by the Chinese, and is called the "Son of the Ocean."

The *Tsien-tsang* is noted for its violent bores, the largest in the world.

They are sometimes thirty feet high, and rush with a velocity of twenty-five miles an hour, sweeping everything before them.

The *Sikiang*, or Canton river, is an important river in the south, and its banks are crowded with shipping.

The following are the principal rivers of China:

NAME.	LENGTH.	MILES OF NAVIGATION.
Yangste Kiang.	3,000	Seven hundred.
Hoang Ho,	2,700	Not navigable.
Sikiang,		Three hundred.
Pei Ho,	900	
Amoor,	1,500	Fifteen hundred.
Sungari,	800	Deep and easily navigable.

SOIL.

12. China Proper has a very fertile soil. The "Great Plain," lying between the Great Wall and the Yangste Kiang river and stretching from the sea to 113° east, embracing an area of 210,000 square miles, supports a population of 177,000,000, the densest population of any region on the globe, of like size.

Corea, except in the south, is sterile.

The *east of the empire* is barren and supports but a scanty population. Less than one-fifteenth of the entire number of people of China live outside of China Proper.

CLIMATE.

13. Of course, in a country of such vast extent, the climate is various. It is cooler than that of western Europe. Summer begins late and ends late. In the desert regions the climate is changeable; the heat sometimes becomes intense, and the cold during the winter, very severe.

A change of climate has taken place about Pekin within the last two hundred years. There is less rainfall and the country less productive.

In general the climate may be said to be healthy, but the country is subject to desolating storms called *typhoons*.

These occur during the months of July, August and September, and never fail to commit great devastation. The region of Canton suffers most severely. On the whole, China may be said to have a climate of extremes.

VEGETATION.

14. The vegetable products are those of the temperate zone. The *tea-plant* is native and cultivated to an immense extent, and exported to the value of \$56,000,000 annually. The *Camphor-tree*, *tallow-tree*, shrubs producing varnish gums, oranges, cinnamon, rhubarb, ginseng, apples, grapes, pomegranates, mangoes, pine-apples, cereals, kitchen vegetables, etc., are leading productions. Tobacco and the poppy are also raised.

ANIMALS.

15. Comparatively little is known of the zoology of China. Most of the wild animals are extirpated. A species of *spaniel* is the only dog. Quails, doves and pheasants are common. Tortoises, turtles, lizards, and sharks are plentiful in the southern waters. Locusts often commit destructive ravages. The silk worm is highly valued and extensively cultivated.

MANUFACTURES.

16. The manufactures are ingenious and varied, including silk, shawls, embroidery, porcelain, lacquered ware, carvings in wood, shell, ivory, and horn, engravings, cabinet work, bell-casting, etc. Nearly every thing is made by hand. The Chinese are not a progressive people and do not readily take to the better methods of the Europeans and Americans. Labor is so cheap that they do not feel the need of improved machinery. In the manufacture of silk they excel. Everybody wears silk in China, even the poor have at least one suit of it.

MINERALS.

17. The northwest of China Proper is the principal mineral region. Coal exists in enormous quantities. Salt is obtained in large quantities, while copper, quicksilver, lead, zinc and tin are extensively worked. Iron is abundant, and petroleum is found to exist in several places. Gold is mined in the bed of the Yangtze Kiang.

COMMERCE.

18. The Chinese are a great trading people. They are shrewd, methodical and enterprising, and not over scrupulous in small dealings. The inland commerce is immense. The *exports* are tea, raw silk, and silk goods, straw goods, mats, fans, parasols, porcelain and lacquered ware, rattan, fire-crackers, trinkets, etc.

The *imports* are opium, longcloths, ginseng, tin, lead, iron, petroleum, and the like.

The whole value of imports in 1881 was \$136,000,000 and the exports \$109,000,000.

One third of the commerce is carried on with Great Britain. *tea* and *silk* make up three-fourths of the exports, while opium and cotton goods constitute two-thirds of the imports.

INTERNAL IMPROVEMENTS.

19. There are scarcely any roads in China and wheel-carriages are rare. Nearly all the merchandize is carried on the backs of mules or by "coolies." The *canals* are numerous, but in very perfect condition. The "*Grand Canal*," the largest in the world, is 650 miles long, but is in a sad state of repair, so that in some places it cannot be used. The Chinese government refused to open the country to *railroads* and *telegraphs*, and destroyed, in 1878, the first and only railroad it ever had. Very few *steamboats* navigate the rivers, and these under restrictions. This people seem to have a natural abhorrence to all modern improvements; however, lately there seems to be a change of feeling on this point. All their implements are of the rudest kind.

INHABITANTS.

20. The Chinese, or "*Sons of Han*," as they call themselves, belong to the Mongolian race. They are on an average 5 feet 4 inches tall.

In *their habits* they are filthy, but industrious, skillful, polite, and provident. They are *cowardly* and of low morals, though not excitable nor revengeful, yet when they once become aroused, they are exceedingly cruel. They are *patriotic* and love their country with considerable devotion.

On the approach of cold weather the Chinaman kindles no fire in his dwelling, but puts on additional clothing. He looks upon cold water with abomination, either as a beverage or for washing. "The costume of the women differs but little from that of the men, and their shoes are the most remarkable part of their toilet." The female infant's feet are compressed and not allowed to grow, so that the shoes of an adult woman measures $3\frac{1}{2}$ inches in length.

POPULATION.

21. The following is the population of the divisions of the empire:

China Proper.....	405,300,000
Manchooia,	12,000,000
Tibet,.....	6,000,000
Mongolia,.....	2,600,000
Thibetia,	8,500,000
Turkestan,	600,000
Total population of the empire,	435,000,000

OCCUPATION.

22. *Agriculture* is held in higher estimation than in any other part of the world.

On the first day of each year the emperor, with his officers, repairs to the "Sacred Field," and plows a furrow with his own hand; the princes and ministers follow his example. A like solemnity is performed by every governor of the provinces.

Much of the land is cultivated with the spade, and irrigation successfully carried on. *Manufacturing* is diligently pursued and commerce is active. Sixteen ports are open to foreign trade.

Mining, considering the mineral wealth, is neglected, and vast stores remain hidden in the earth. *Oyster* and the *fisheries* are profitable.

GOVERNMENT.

23. The government is *despotic*, the emperor being assisted by a privy council. The *laws* are rigid, but mildly administered. China Proper is divided into *eighteen provinces*, each of which is presided over by a governor. The *executive system* is based on *competitive examinations*, intended to sift out of the millions of educated, the best for the official positions. These examinations are held once every three years.

EDUCATION.

24. Education is regarded as the highroad to official employment, to rank, wealth, and influence, and is eagerly sought by all classes. The government provides state examinations, but does not otherwise assist in the support of the schools.

The Chinese have *no alphabet*, but a distinct character for every syllable. In reading a Chinese book you begin at the bottom instead of the top, and pupils in studying read at the top of their voices.

The *quality* of their education is very inferior to that of Europe. In *mathematics* they are deficient, but have made some progress since their acquaintance with European mathematical works. Their *astronomy* is the astrology of the ancients. Their *geographical knowledge* is confined mainly to their own country. In *art, workmanship* they defy comparison with Christian art, but their designs are the most grotesque and incongruous. Their *music* is painfully discordant to cultivated ears. They have many kinds of musical instruments, but have no knowledge of rhythm, melody, or harmony. "Their *singing* is with the falsetto voice, between a squeal and a scream."

Those who fail to pass the examinations for the higher offices are employed as school teachers, notaries, clerks. All the people learn to read the same language, but the dialects are so numerous and difficult that, in conversation, the people of one province cannot understand those of any other province.

RELIGION.

25. The religion of *Confucius*, which is a mere system

ldly morality, is adopted by the court. *Buddhism*, called the religion of Fo, is the faith of the masses.

The *worship of ancestors* is a remarkable and prominent feature of these social life. The people generally have no fear of death, and suicides are common. They never refer to death in direct terms, but paraphrase by expressions as the person "exists no more," "he has saluted the age," "ended to the sky."

The Chinese philosophy is atheistical, and deduces the development of the universe from one unintelligent and will-less principle. Hence all educated Chinese are atheists, at least, theoretically.

CUSTOMS.

A Chinaman, when he meets you, takes off his shoes instead of his hat; he shakes his own hands, not his friend's. He wears a queue overing on his head, and all the hair of his head is shaven off, except a bunch on the top, which is braided into the "pig tail." The *officials* are divided into ranks, and each rank is distinguished by the button on the cap.

They *never educate* the boys, but not the girls. The *place of honor* is the left hand. They eat with two sticks instead of knives and forks. They use but little *tobacco*, but are addicted to the *opium* habit. *White* is the color of mourning, *black* that of gayety.

INVENTIONS.

The Chinese have given many important inventions to the world. The art of *paper-making* was known in the first century. *Printing* from wooden blocks was invented in the seventh century. The *compass* has been in use among them for several thousand years.

Except the *telegraph* and the *steam engine*, scarcely any great modern invention has been made which has not been in use among them for many centuries.

CITIES.

These are numerous, and many of them quite large. All reports concerning the number of inhabitants are only approximate, as no census of these cities is ever taken, or, at least, foreigners do not get the exact figures:

NAMES.	POPULATION.	NAMES.	POPULATION.
	500,000	Kashgar,	70,000
Shanghai,	1,500,000	Nankin,	500,000
Hangchow,	600,000	Tientsin,	930,000
Swatow,	From 500,000	Takow,	235,000
	to 8,000,000		
Amoy,	250,000	Amoy,	88,000
Kong,	160,000	Singtan,	1,600,000
Victoria,	120,000	Victoria,	102,000

HISTORY.

The Chinese records go back several thousand years before the Christian era. These are fabulous; but there is no doubt that China is the oldest existing dominion on the face of the globe. After several dynasties had passed away *Confucius*, the celebrated moralist, philosopher, and lawgiver, was born, 549 B. C. In the year 215 B. C., the *Great Wall* was built, as a defense against the Tartars. In 1203, Zingis Khan conquered the northern provinces. *Kublai Kahn*, his grandson, subjugated the country in 1280. The Tartars were driven out in 1368.

In 1664, the Mantchoo Tartars conquered the country, and established the present line of sovereigns, which has insured peace between China and its northern provinces. *King Long*, an emperor distinguished for his intelligence, died in 1799. In 1840, a war broke out between Great Britain and China, in consequence of the destruction, by the Chinese, of a large quantity of opium, which was about to be smuggled into Canton. The Chinese were defeated in numerous engagements, and were compelled to pay \$21,000,000, and to open to foreign trade, besides the port of Canton—Amoy, Foo Chow, Ningpo, and Shanghai—ceding, also, the island of Hong Kong to the English in perpetuity. The present emperor is Kwong Shu. He was born in 1871, and became emperor, January 12, 1875.

AFRICA.

MAP EXERCISES.

CAPES.—Bon, Verde, Good Hope, Guardafui, Agulhas, Corrientes, Frio, Negro, Lopez, St. Paul, Three Points, Palmas, Blanco, Bojdaor, Nun, Amber, S. Marie.

GULFS AND BAYS.—Cabez, Sidra, Suez, Aden, False, Table, Wal-fish, Biafra, Benin, Delagoa, Algoa.

MOUNTAIN RANGES.—Atlas, Crystal, Kong, Lupata, Nieuweveld, Dragon, Matoppo, Mosamba, Lokinga, Blue.

MOUNTAIN PEAKS.—Cameron, Kilimanjaro, Kenia, Milstin, Compas, Mfumbira.

ISLANDS.—Madagascar, Amiranto, Comoro, Seychelle, Mascarene, Reunion, Mauritius, Zanzibar, St. Helena, Ascension, Annobon, St. Thomas, Princes, Fernando Po, Sherboro, Canary, Verde, Madeira, Azores, Socotra.

RIVERS.—Nile, Congo, Niger, Senegal, Gambia, Orange, Swakop, Nourse, Limpopo, Gr. Flsh, Coanza, Benue, Blue Nile, Gazelle, Atbara, Juba, Zambeze, Haines, Sobat, Lukuga, Shari, Shelif, Molopo.

AKES.—Albert, Victoria, Tanganyika, Bangweola, Tsad, Nyassa, Ngami, Dilolo, Tunis, Sankorro, Zana, Iro, Shirwa.

TOWNS.—Cairo, Alexandria, Thebes, Tunis, Suez, Morocco, Tripoli, Fez, Ceuto, Algiers, Oran, Constantine, Berbera, Gondar, Cape Town, Petermaritzburg, Tananarivo, Zanzibar, Monrovia, Freetown, Port Natal, Mozambique, Kuka, Cumassie, Abomey, Sokoto, Murzuk, Timbuku, Abesher, Susa, Loango, Mossamedes, St. Paul de Loanda, Pretoria, Bethany, Gambia, Senegal, Grahams Town, Sego.

COUNTRIES.—Egypt, Nubia, Darfur, Kordofan, Zanguebar, Mozambique, Madagascar, Abyssinia, Somali, Adamaua, Upper Guinea, Lower Guinea, Cape Colony, Liberia, Ashantee, Sierra Leon, Senegambia, Morocco, Algiers, Tunis, Tripoli, Masina, Sokoto, Waday, Kanem, Bambarra, Dahomey, Loango, Congo, Benguela, Mossamedes, Damaras, Ovampos, Namaquas, Orange River, Republic, Transvaal, Caffir, Land, Zulu Land, Sofala, Fezzan, Air, Moors, Tibesti, Adjan, Makololo.

RELATIVE POSITION.—In what direction is Morocco from Algiers? from Cairo? from Cumassie? from Cape Town? from Zanzibar? from St. Helena? from Kuka?

TRAVELS.—On what waters would a vessel sail in going from Cairo to Algiers? to Cape Town? to Suez? to Berbera? to Sebastopol? From Alexandria to New York? to Vera Cruz? to Hull? What countries would you cross in traveling by land from Nubia to Abomey? to Grahams Town? to Morocco? from Gondar to Sego? to Tunis? Cape of Good Hope? to Mozambique?

MISCELLANEOUS.—What is the time at Cairo when it is noon at Columbus, Ohio? the time at Morocco? at Cape Town? What season at Cape Colony? at Algiers? at Timbuku? At what place in Africa does the longest day occur? The shortest? What places in Africa have no latitude? Where is the sun perpendicular to-day at noon? What divisions of Africa are crossed by the 15° east longitude? What by the 35° ?

DESCRIPTION.

GENERAL STATEMENT.

1. Africa is remarkable for its burning climate, its singular animals, and its peculiar race of inhabitants.

POSITION.

2. (1) Africa is bounded on the north by the Mediterranean sea; on the east by the Isthmus of Sues, Red sea, and the Indian

ocean; on the south by the Indian and Atlantic oceans, and on the west by the Atlantic ocean. (2) It lies between $37^{\circ} 20$ min. north and 35° south, and between $51^{\circ} 22$ min. east, and $17^{\circ} 33$ min. west longitude.

EXTENT.

3. Its greatest length is 5,000 miles, and greatest breadth 4,800 miles. Area, 11,557,000 square miles.

Distance from	Algiers	to	Cairo.....	1,900 miles
"	"	"	" Murzuk.....	900 "
"	"	"	" Greece.....	1,050 "
"	"	"	" Strait of Bab-el-Mandeb,	3,000 "
"	"	"	" Morroco,.....	900 "
"	"	"	" Paris.....	825 "
"	"	"	" Madrid,.....	450 "
"	"	"	" London,.....	1,050 "
"	"	"	" St. Petersburg,.....	2,100 "
"	"	Sicily	" Africa.....	300 "
"	"	Africa	" Spain,.....	15 "

COAST.

4. Africa consists of a vast peninsula, with no bays setting deep into its sides, and no rivers navigable to any great extent. For these reasons it has been less accessible to discovery than other regions of the world, and hence large portions of its territory remain unexplored. The coast line measures 16,000 miles; about one mile of coast to every 710 miles of continental area. There are are but few good harbors.

From Cape Negro to the Orange river, a distance of 900 miles, not a single stream of fresh water empties into the sea. The coast here is low and desert, while in and about Cape Colony it is bold and rocky.

CAPES.

5. The *extreme capes* of Africa are Bon on the north, Guardafui on the east, Agulhas on the south, and Verde on the west; the latter is so called from rich green covering of gigantic baobab trees. Other capes are Blanco, Bojador, Nun, Lopez, Delagoa, Guardafui, etc.

The Cape of Good Hope was discovered in the search of a passage by sea to India. It was so called by the first discoverer, who thought it the southern point of Africa, and thus gave "Good Hope" of reaching India by sea.

GULFS AND BAYS

6. The leading gulfs and bays are Cabez, and Sidra on the north, tributary to the Mediterranean, etc.

SEAS.

7. But three seas wash the shores of Africa. Mediterranean on the north, Red and Arabian on the northeast.

CHANNELS AND STRAITS.

8. The *Strait of Gibraltar* separates Morocco from Spain, and connects the Atlantic with the Mediterranean; it is fifteen miles wide.

The *Strait of Bab-el-Mandeb* ("The Gate of Tears") derived its name from its dangerous navigation. It separates Abyssinia from Arabia, and is twenty miles wide. *Mozambique channel* separating the island of the same name from the continent, is 250 to 600 miles wide, and 1,000 miles long.

ISLANDS.

9. There are several islands belonging to Africa, some of which are very fertile. Most of them have warm climates and yield tropical productions.

(2) *Gerba*.—On the coast of Tripoli is the small island of *Gerba*, which is noted for its monument of *Christian Skulls*, gathered from a battle-field in the vicinity, and heaped upon a rock, where it has remained for several centuries. It serves to keep alive that hatred which the Mohammedans have been accustomed to indulge toward Christians.

(3) *Azores*.—Nine in number, are about 500 miles west of Portugal and present a very rugged aspect.

They produce wines and brandy, oranges, lemons, salt pork, beef. There are few good harbors. Population, 27,000.

(4) *Cape Verde "Green"*.—Consist of 15 principal with some smaller islands; they contain the celebrated volcano *Fogo*, 9,150 feet high.

There are but few trees, and there is great scarcity of water. The products are fruits, maize, beans, coffee, sugar, tobacco, red coral, salt, oil-nuts, cattle, pigs, goats, asses, fowls, and amber. Area 1,680 square miles. Population 91,000.

(5) *Canary "Happy Islands"*.—Belong to Spain and are situated 60 miles from the coast; they consist of 7 principal islands and are singular in formation and productions. The hot winds from the continent often destroy the vegetation and induce disease.

The Canary bird is a native of these islands. The chief productions are cochineal, oil, grain, silk, wine, raisins, potatoes, sugar-cane, and fruits. Commerce is carried on chiefly with the United States and England. Area 2,980. Population, 285,000.

(6) *St. Helena*, which is crowned by a lofty rock, belongs to the British, and was the prison of Napoleon Bonaparte till his death, in 1821.

It is 700 miles from Ascension; 1,400 miles from Africa; and 2,000 miles from Brazil.

Ascension, to the north-west of St. Helena, is a small, barren island, with a fine harbor, and abounding in fish and sea-fowl.

This and St. Helena are the resort of ships traversing the seas.

(7) *Mauritius*, or the *Isle of France*, belongs to England, and is noted for a lofty mountain, crowned by a rocky peak, called *Peter Botte's Mountain*.

It is much subject to devastating storms. *Bourbon* belongs to France, and is famous for its *Volcano*, whose burning fires serve to light the mariner on his way, *Socotra* belongs to *Keshin*, an Arabian state, and is noted for its trade in aloes. Area 1,000 square miles. Population 5,000. *Comoro* islands are noted for their cattle and fish.

(8) *Madagascar*, in the Indian Ocean, twice as large as Great Britain, containing 228,000 square miles, has a fine soil and a numerous population. Silk-worms are reared, and honey and wax are produced in great abundance in the woods. The mountains supply gold, silver, lead, and iron.

The inhabitants manufacture iron utensils, and work in gold and silver articles. They are divided into several tribes, all of which are barbarians. This island was known to the Arabs in the thirteenth century. In 1642, the French settled upon it, and made several attempts to colonize it, but without success. European missionaries were protected by one their late kings, but in 1835, Christianity was prohibited; and in 1845, all Europeans were expelled.

SURFACE.

10. A general description of Africa must be imperfect owing to its great size and consequent diversity.

Africa has mountain ranges near its coast almost completely enclosing its interior. It is sometimes likened to a huge trough, the mountains forming its sides.

The *northern part* contains the plateaus of Hamada and Barca.

The *interior* is supposed to be moderately elevated, as many of the most important rivers take their rise in about the same region.

The *southern part* is a vast table land sloping gently towards the north.

MOUNTAIN RANGES.

11. The *Atlas Mountains* are in North-Western Africa, trending through the Barbary States from north-east to south-west.

The name Atlas was derived from Atlas, King of Mauritania, and one of the gods of the ancients. He is said to have been the first who taught that heaven had the form of a globe. Ovid relates that Perseus having been refused shelter by Atlas, changed him, by means of the head of Medusa, into a mountain on which rested the firmament.

The *Atlas* mountains are 1,500 miles long and 4,000 feet high; the *Kong* mountains have an average elevation of 2,500 feet; the *Snowy*, 10,000 feet.

MOUNTAIN PEAKS.

12. The following are the highest peaks:

NAMES.	HEIGHT.	NAMES.	HEIGHT.
Milstin...	11,400 feet	Table Mountain,	3,600 feet
Kilimanjaro,	20,000 "	Vole Fogo,	9,150 "
Kenia...	20,000 "	Teneriffe...	12,200 "
Peak of Pico,	7,600 "	Spitz Kop...	10,240 "

PLAINS, PLATEAUS, ETC.

13. The *Highlands of Abyssinia* are from 6,000 to 8,000 ft. high.

The *Plateaus of Barca* and Hamada are in the northern part.

Kilihari Desert in Southern Africa is an extensive arid region.

The *Great Karroo Plains* in Cape Colony are vast areas "annually covered with a rich vegetation and pastured by numerous herds, but when the dry season comes they are arid deserts."

The *Sahara* is the most extensive desert region on the globe. This sea of sand stretches from the Atlantic, nearly to the shores of the Red Sea.

It consists of a table-land raised a little above the level of the sea, covered with moving sand, and here and there, containing some rocky heights and valleys where water collects, and nourishes a few thorny shrubs, ferns, and grasses. The desert, however, has some fertile spots called *oases*; the largest is *Fazzan*. The desert is crossed by companies called *caravans*, the people being generally mounted on camels. This animal, sometimes called the "*Ship of the Desert*," is able to bear the burning heat of these regions. It can drink water enough to last several days, and the soles of its feet are like a cushion just adapted to traveling over hard stony ground.

Travelers in the desert are often beset by predatory tribes, and sometimes are overwhelmed by drifting sand.

Parts of the Sahara are from 80 to 340 feet below the sea-level. It is supposed to have been, at some time, in part, covered by the sea. Since these low places approach so near the sea, one on the northern part, and another in the western, there is a *project* to tunnel into the sea and let in the water, and so convert these low places into inland seas. It is claimed that in this way the rain-fall would be increased and the remainder of the Sahara become a fruitful country.

A *portion of Abyssinia* is also about 570 feet below the sea-level. The Sahara is about 3,000 miles long by 1,000 wide and embraces nearly 3,000,000 square miles; in other words it is about three times as large as the Mediterranean.

OBJECTS OF INTEREST.

14. Africa is so imperfectly known that a satisfactory description of its curiosities can not be given.

The *Victoria Falls* of the Zambeze river are about 400 feet high. During the dry season but little water falls over the precipice, but when the river is full it is one of the most magnificent cataracts known.

"After a descent of a few feet, the water breaks into a white mass like a sheet of driven snow, and sends up columns of vapor 800 feet above the brink of the falls," in which are seen the most beautiful colors the eye can behold.

Egypt is a very interesting country to the historian and the traveler. It abounds in ruins of every description and of the most stupendous proportions.

Other portions of Africa are of interest to the student of nature, but the climate is so unhealthy that few will risk their lives in attempting to explore this great continent, and to reveal its mysteries and curiosities to the world.

LAKES.

15. The lakes of Africa are for the most part unimportant. They are *generally shallow* and many during the dry season become mere stagnant pools of water, breeding disease, or they dry up entirely.

Some of them, as *Nyassa*, *Zana*, and *Albert* are very deep; the former is subject to sudden and violent *storms* which lash its waters to fearful heights.

Fish and other animals exist in most of them. The lakes of the *Barbary States* are so salt that during the summer when they are nearly dry they leave incrustations of salt along their shores.

The following list includes the important lakes of Africa:

LAKES.	LENGTH.	BREADTH	AREA.	HEIGHT.
Tsad,.....	150	120	10,000 to 50,000	1,150
Victoria,.....	200	200	30,000	2,000
Albert,.....	150	50	28,000	2,700
Nyassa,.....	350	20 to 60	13,000	1,520
Ngami,.....	60	25	1,200	3,300
Tanganyika,.....	480	10 to 60	11,000	2,800
Bangweola,.....	150	70	9,000	4,000
Zana, or Dembea,.....	60	25	1,300	

RIVERS.

16. The rivers of Africa like her lakes are for the most part commercially unimportant; they are broad and shallow streams and thus afford little navigation. The most important river is the *Nile*, remarkable for its annual overflow which brings a great deal

of rich soil down from its upper course and distributes it over the lower country through which it flows and this fertile valley is thus called the "Gift of the Nile."

This remarkable river has not a single tributary in the last 1,500 miles of its course, and gradually diminishes in size as it approaches the sea. Its delta has an area of more than 11,000 square miles.

The *Congo* is a vast river emptying its muddy waters into the Atlantic. The *Zambeze* is noted for its "falls." The *Nijer* loses much of its water by sinking into the sand near its mouth.

RIVERS.	LENGTH.	AREA OF BASIN	REMARKS
Nile, ...	4,000	1,425,000	Eleven mouths; Numerous cataracts in its upper course.
Congo, ...	3,000	...	1,400 miles of navigation; 35 cataracts.
Senegal, ...	1,000	...	Navigable 450 miles for flat-bottomed boats.
Senegambia, ...	1,000	...	Navigable 150 miles. Mouth four miles wide.
Niger, ...	3,000	...	22 months; 1,800 miles of navigation when full of water.
Zambeze, ...	1,800	...	Affords little navigation; bars across its mouth.
Limpopo, ...	...	...	Vessels of 200 tons can ascend 60 miles.
Orange, ...	1,150	446,000	Flows through a desert country.

SOIL.

17. The soil is various; vast tracts consist of barren sands. The parts along the shores except along the coast of Sahara are very fertile. The *interior* is but little known, but so far as known it consists of extensive sterile regions alternating with fertile valleys.

The soil along the borders of the *Great Desert* is not well adapted to farming as it is too dry; the *date palm* flourishes here best as it requires a dry sandy soil.

CLIMATE.

18. Owing to the position of Africa, the greater part of it lying in the Torrid zone, and to the extent of its arid plains, its climate is *excessive*, and the temperature higher than in any other part of the world.

In the *deserts of the Sahara* and Nubia, the heat is the most oppressive that can be imagined.

The Arabs say, "The soil is like fire and the wind like a flame;" yet, while the temperature sometimes rises to 150° Fah. during the day, it sinks so rapidly during the night that it freezes. This is caused by the dryness of the air, allowing radiation to go on very rapidly during the night, and heating during the day.

The hot winds from the Sahara are called *Simoons* and are very destructive.

In the *equatorial regions*, it rains for six months almost incessantly; during the rest of the year it is dry.

In some places there are *two rainy seasons* and two dry seasons in one year.

The *greatest annual rainfall* occurs at Sierra Leone, 189.6 inches.

The *hot winds* of the Sahara rising draw in the moist winds from the sea, whose vapors are condensed by the mountains along the coast and clouds drop their moisture in copious showers.

Along the *western coast* of Africa within the tropics and in many other places the climate is very unhealthy, especially to white men.

The *hottest part* of Africa extends in a broad belt from the lower part of the Red sea to the Gulf of Guinea. It has an average temperature of eighty-one degrees. The *Sahara* has an average temperature of seventy-nine degrees; Cape Colony, sixty-eight degrees.

VEGETABLE PRODUCTIONS.

19. Africa presents the most *striking contrasts* in its vegetation. A great part of its surface consists of arid deserts; but in the vicinity of these, there are countries covered with the richest verdure. Wherever the land is watered, vegetation is characterized by the utmost vigor and magnificence.

The *Barbary States* are covered with groves of oranges and olives, with fields of maize, cotton, wheat, sugar-cane, and the grape; with forests of evergreens, oak, pines, cork-trees, cypresses, arbutus, and myrtle.

Egypt produces cotton, acacia, onions, fruits, tamarind, sugar, wheat, rice, and corn.

The *coffee tree* grows in Abyssinia, Liberia, and other places.

Cotton and *indigo* grow wild in Soudan.

Lemons and *citrons* grow in nearly all parts.

The most *dense forests* imaginable cover Central Africa.

In *South Africa* many of the grains of the temperate zones flourish.

North-East Africa produces frankincense, myrrh, cinnamon, and other spices.

MINERALS.

20. The chief minerals of Africa so far as known, are gold, iron, copper, diamonds, salt, granite, limestone, and sandstone.

Gold seems most abundant in South Africa; *diamonds* along the Orange river.

MANUFACTURES.

21. The manufactures of Africa are unimportant. They consist of morocco leather, oils, cotton and silk goods, and a few rude implements of war and agriculture.

COMMERCE.

22. Owing to its barbarous state, its want of deep inlets and navigable lakes and rivers, and its unhealthy climate. Africa is far behind the other grand divisions in the amount and value of its commerce.

The chief articles of *export* are gold, ivory, hides, morocco leather, dates, palm-oil, gums, wax, ostrich feathers, spices, slaves, etc.

About 10,000 slaves are annually sent from Lake Tsad to the coast of the Mediterranean. The whole route is strewn with the skeletons of those who have perished on the way.

The *imports* are various articles, chiefly from Europe and America: cloth, trinkets, and ornaments, which are bartered to the natives.

NATURAL ADVANTAGES.

23. The pupil should here be required to give the natural advantages of Africa, according to preceding models.

INTERNAL IMPROVEMENTS.

24. Africa is lacking in internal improvements. There are a few *railroads* built by Europeans. Several important lines of railway have been proposed which when completed will open vast territory of this "Dark Continent."

Egypt is well supplied with a net work of railroad's managed by the government.

Public roads and *bridges*, such as are known in our country and in Europe are not known here.

The *Suez canal*, connecting the Mediterranean and Red seas, was built chiefly by the French, but is now under the control of the English. It was formally opened November 17, 1869. It is 100 miles long, 325 feet wide at the top and 75 at the bottom, and 26 feet deep; cost about \$55,000,000. There are numerous smaller canals in Egypt used for irrigating the land.

ANIMALS.

25. Africa is remarkable for the multitude and variety of its animals. The *giraffe*, the tallest of animals; the *hippopotamus*, an enormous beast resembling the hog; the *chimpanzee*, a large ape, formed more like a man than any other creature; the *zebra* and *quagga*, beautifully striped and resembling the horse; the *gnu*, or horned horse are all peculiar to Africa.

This country also, in company with Asia, has troops of elephants, herds of wild deer, the rhinoceros, hyena, ostrich, crocodile, and serpents of monstrous size.

The *termites* or *white ants* swarm in the tropical regions, and build their hills to the height of twelve feet; the interior displaying bridges, archways, and passages most ingeniously contrived.

The *social weaver*, a small kind of bird, associate together, and build a common nest on a tree, shaped like an umbrella, in which several hundred live together.

The *ostrich* is found along the desert and open plains. The *guinea-fowl* is indigenous to Western Africa.

Besides these, there are thousands of insects in every quarter, among which are the *locust*, a scourge of this continent from time immemorial, and the *tsetse*, a fly about as large as a common house-fly, whose bite is fatal to horses and cattle, but harmless to man; it is found in South Africa. Huge serpents infest all parts and are the dread of the inhabitants.

POPULATION.

26. The inhabitants consist chiefly of *Moors*, who occupy the Barbary States; *Arabs*, who inhabit the Great Desert and its borders; *negroes*, who are spread over the middle and southern portions; *Caffirs* and *mixed races*, who occupy the south-eastern border. There are also many tribes scattered here and there, which partake more or less of these several races. The *English* occupy the extreme southern part, and many *French* live in Algeria.

NUMBER OF INHABITANTS.

27. So little is known of Africa that barely an approximate estimate can be made as to the number of inhabitants.

The following table gives the population of some of the principal states. (From the Eclectic No. 3.)

NAMES.	AREA.	NO. OF INHABITANTS.
Morocco,.....	260,000	6,000,000.
Algeria,.....	250,000	2,146,000
Tunis,.....	46,000	2,000,000
Tripoli and Fezzan,.....	344,000	1,200,000
<i>Dominion of the Khedive.</i>		
Egypt,.....	113,000	5,252,000
Nubia,.....	334,000	1,000,000
Darfur,.....	106,000	5,000,000
Kordofan,.....	58,000	2,170,000
The Sahara,.....	2,436,000	4,000,000
Soudan,.....	1,060,000	51,400,000
Liberia,.....	10,000	718,000
Abyssinia,.....	158,000	3,500,000
Cape Colony,.....	224,000	718,008
Natal,.....	18,000	290,000
Orange River Republic,.....	42,000	57,000
Transvaal,.....	114,000	275,000
Other colonies in South Africa,.....	52,000	221,000
Remainder of General Division,.....	5,821,000	110,052,000
Total,.....	11,557,000	206,000,000

OCCUPATION.

28. The chief occupation in the more civilized portions are farming, hunting ostriches, selecting ivory. The great bulk of the inhabitants are savages and have no useful pursuits. The leading pursuits of the inhabitants of Cape Colony, are stock-raising and ostrich-farming.

LANGUAGE.

29. Our ignorance of this "Dark Continent" renders it impossible to give a correct account of the language. Where settled by Europeans, European languages are used. It is estimated that not less than 150 different languages are spoken in Africa.

GOVERNMENT.

30. Nearly all the governments are *despotic*.

A large retinue of soldiers always attend the despot, and in Morocco and other countries, every one whom the despot meets must fall with his face to the earth till the procession has passed.

Under the benign influence of Christianity, the social condition of the inhabitants is improving.

EDUCATION.

31. A few schools exist in the foreign settlements. Among the natives there is the greatest ignorance, degradation and vice.

RELIGION.

32. In northern Africa the people are chiefly *Mohammedans*, but in many places their religion is mixed with the pagan worship.

The vast majority are in a condition of the darkest heathenism. *Superstition* reigns supreme and women are treated as slaves.

POLITICAL DIVISIONS.

33. The political divisions are given in the map exercises to which refer.

FOREIGN POSSESSIONS.

34. Algeria belongs to *France*; the *French* have also possessions on the Senegal and Gambia river. The *British* have settlements in Cape Colony, Sierra Leone, Natal and the Gold Coast. The Canary islands, Fernando Po, Annobon belong to *Spain*. The *Portuguese* possessions are on the east coast of Mozambique, Angola, and Benguela.

CHIEF TOWNS.

35. The cities of Africa are ill built, with narrow, crooked, and gloomy streets. The following are the most important.

Cairo (350,000) "The Victorious," is on the Nile five miles from the commencement of the delta.

It has eighty public baths, three hundred mosques and a Mohammedan university of 11,000 students. Climate is healthy.

Alexandria, (212,000) so named by its founder, Alexander the Great, is the emporium of Egypt.

It is 112 miles from Cairo, and *exports* corn, cotton, rice, wool, gums, dates, sugar; and *imports* woolen and silk goods, hardware, coal, machinery, etc. Its library founded by Ptolemy Philadelphus, was the largest of ancient times, numbering 700,000 volumes, and was accidentally destroyed by fire in the wars with Julius Cæsar and Caliph Omar. At one time the city contained 600,000 inhabitants. "*Pompey's Pillar* and the catacombs at the Necropolis are the most interesting remains of antiquity."

Tripoli, (20,000) on a rocky promontory of the Mediterranean, 300 miles from Sicily and 600 miles from Algiers, has a fine harbor; owing to the marshes near by the climate is unhealthy.

Tunis, (125,000) is about three miles from the ancient city Carthage.

It is a very ugly city and everything is exceedingly filthy. Its population numbers 25,000 Jews.

Morocco, (40,000) the capital of Morocco and formerly a flourishing city, is now half in ruins.

In its appearance it resembles Tunis. Its walls are entered by eleven gates.

Algiers, (52,000) is built on the north slope of a hill 500 feet high and facing the Mediterranean.

Its houses are painted white and the city presents a fine appearance at a distance on the sea. There are some fine squares and public gardens.

Fez, (65,000) is the most important city in Morocco.

The streets are dark and extremely filthy; the houses are high. Ten thousand Jews live here.

Cape Town, (45,000) is the principal city of Cape Colony and is well paved, well lighted and contains several colleges, hospitals, and public gardens.

Tananarivo, (75,000) the capital of Madagascar, has a fine situation in the center of the island and contains manufactures of beautiful gold and silver chains, and silk goods.

Mozambique, (35,000) is on a fine bay ($5\frac{1}{2}$ miles long and 5 miles wide) on the eastern coast.

Other cities are Zanzibar, 80,000; Oran, 34,000; Pretoria, (small city); Constantina, 35,000; Monrovia, 1,000; Free Town 15,000; Berbera, (small city).

HISTORY.

36. Though Africa gave birth to many arts and sciences, yet in no part of the world are the masses of the people so ignorant and degraded. Egypt, 3,000 years ago, was the chief seat of human learning, and thence civilization spread over the world. *Carthage*, in Northern Africa, was distinguished for its power and civilization, becoming for a time the competitor of Ancient Rome. In the subsequent ages, even Egypt and other enlightened portions of the continent were buried in Barbarism, from which they have not since emerged. In all ages, the negro natives appear to have been nearly the same as now, without books or education, or enlightened institutions.

ANCIENT GEOGRAPHY.

37. The ancients appear to have had very inadequate and erroneous notions respecting Africa. The name which is now given to the whole continent was restricted to a small territory, including Carthage and its vicinity. The ancients were only acquainted with the northern and eastern coasts, and deemed it less extensive than Europe. The Carthaginians, it is supposed, circumnavigated Africa; but no distinct idea of its geography seems to have been formed by them. Indeed, this division of the world in the early ages was a region of mystery, and continued so even down to the present century. It is but recently that the sources of the Nile and Niger have been ascertained; and even now, the great interior region called *Ethiopia* is an unknown land.

DOMINION OF THE KHEDIVE.

MAP EXERCISES.

Locate the following:

POLITICAL DIVISIONS:—Egypt, Nubia, Kordafan, and Darfur.

RIVERS:—Nile, Atbara, Blue Nile, Arab, Gazelle.

CITIES:—Cairo, Alexandria, Suez, Rosetta, Khartum, Damietta.

MISCELLANEOUS:—Bound Egypt. What is the latitude and longitude of its capital. What is the difference of time and distance in miles between Cairo and London? In what zone is Egypt?

DESCRIPTION.

EXTENT.

1. Areas and population of the divisions of the Dominion of the Khedive.

		POULATION.
Area of Egypt,.....	213,008	5,252,000
.. .. Nubia,.....	334,000	1,000,000
.. .. Darfur,.....	106,000	5,000,000
.. .. Kordofan.....	58,000	2,170,000
Total population,		13,422,000

SURFACE.

2. This famous country is a long and narrow strip of land, lying between two ranges of mountains, and traversed by the Nile. Darfur is an immense oasis of the Sahara, and Kordofan is a vast level tract.

RIVERS.

3. The Nile after a course of more than 4,000 miles, empties into the Mediterranean through *eleven* mouths.

This river is remarkable for its overflow which fertilizes its banks. It receives not a single tributary during the last 1,500 miles of its course, and the river grows smaller near its mouth, owing to the evaporation of its waters and to the sinking away of some of them through the sands.

Its upper course contains many rapids and falls, and some fine scenery. The chief tributaries of the Nile are the *Atbara* and *Blue Nile* on the east, and the *Gazelle* on the west.

SOIL.

4. The valley of the Nile and the delta embracing an area of 11,350 square miles is celebrated for its fertility. Nubia, formerly called *Ethiopia*, once the seat of populous and civilized nations is now marked with barbarism and desolation. It is composed of rocky and sandy deserts, with strips of fertile soil. The average width of the valley of the Nile is about eight miles.

CLIMATE.

5. It seldom rains in Egypt, but in the regions of the upper Nile the rains are abundant, which give rise to the floods. The climate is *hot and dry* and the country is subject to the plague.

The temperature of the delta is considerably modified by the proximity to the sea, and the north winds.

VEGETATION

6. Sugar, corn, rice, cotton, tobacco, and indigo are the chief products.

The waters of the Nile, during the period of inundation are collected in reservoirs, and afterward used for irrigating the land.

Oranges, dates, figs, and tamarinds are of an excellent quality. *Forest trees* are scarce, but many have been planted of late years, and an increase of rain-fall has resulted.

ANIMALS.

7. The gazelle, hyena, and jackel are animals of the desert. Crocodiles and hippopotamuses are numerous in the middle and upper course of the Nile.

Nearly all the *domestic animals* of Europe are bred here. Poultry and pigeons are kept in enormous numbers; the eggs of the former are hatched out in artificial ovens. Camels, buffaloes, donkeys, and mules are extensively raised.

MANUFACTURES.

8. The manufacturing interests of Egypt consists chiefly in the weaving of cotton, linen, and woolen fabrics, and in the manufacture of leather, coarse pottery, glassware, and household-goods. Outside of Egypt there is little manufacturing.

COMMERCE.

9. Egypt has extensive foreign trade, which is facilitated by the numerous rail-roads already in operation. There are many canals of great size, upon which and the Nile, steamboats ply.

The leading articles of *export* are cotton, sugar, pulse, wheat, ivory, senna, and gums.

The *imported staples* are woven goods, petroleum, timber, iron, and coal.

Great Britain monopolizes more than half the commerce; France, Austria, and Italy also have large interests. The trade with Soudan is large. The *exports*, of 1850, amounted to \$52,000,000, and the *imports* to about \$26,200,000.

INHABITANTS.

10. The greater number of the people are Arabs. The *Copts*, the descendants of the Ancient Egyptians, form about one-third of the inhabitants. Besides these there are some Jews and Turks; the latter constitute the ruling people.

RELIGION.

11. Mohammedanism is the prevailing religion. In the south, however, it has become sadly corrupted by the intermixture of pagan rites. There are also many Christians in Lower Egypt.

EDUCATION,

12. The bulk of the people are in a degraded condition. There are a few schools. Egypt, once the cradle of the arts and sciences, and renowned in ancient history, is now chiefly celebrated for its wonderful ruins.

ANTIQUITIES.

13. The splendid remains of antiquity in Egypt attest its former grandeur.

The *Pyramids* of which there are near a hundred, are the most stupendous works of man. The largest, at Ghizeh, near the Nile, covers eleven acres of ground, and is about five hundred feet high. Besides these, in various places there are *majestic images, statutes, and obelisks*, with the colossal ruins of temples and cities, which excite the wonder and admiration of the beholder.

CITIES.

14. Cairo, and Alexandria have been noticed. The latter quite recently (1882) was bombarded and burnt to the ground by the English. *Rosetta* is finely built and is a favorite place for summer visitors. Here, in 1799, was found the famous "Rosetta Stone" which gave the key to Egyptian Hieroglyphics. *Damietta, Suez, Port Said* are other important towns.

HISTORY.

The history of Egypt goes back to the early ages of the world. The earliest dynasty of which we have any account, goes back to 4004 B. C. It is also supposed to have been settled by the descendants of Ham, led by *Mizraim*, sometimes called *Menes*, 2188 B. C. Owing to the fertility of the soil, the inhabitants rapidly increased. Even in the time of Abraham, Egypt had become noted for its wealth and splendor. In the time of Moses, about 1520 B. C. it had become the most learned and civilized portion of the globe, and continued so for many centuries afterward. It was conquered by the Persians in the year 529, B. C.; by Alexander, in 332; and by the Romans, 30 B. C. The last of a long line of sovereigns, called Ptolemies, was Cleopatra, renowned alike for her beauty, her splendid court, and the romantic incidents of her life. Egypt passed under the yoke of the Byzantine empire, and was wrested from them by the Saracens 640 A. D. The Turks conquered it in 1517; the French in 1799; in 1839 it became a fief of the Ottoman Empire.

OCEANICA.

MAP EXERCISES.

Locate the following:—

ISLANDS.—New Guinea, Sumatra, Java, Celebes, Borneo, New Zealand, North, South, Tasmania, Banda, Philippine, Caroline, Pelew, Gilbert, Ellice, Solomons, Ralick, Radack, Fejee, Loyalty, New Caledonia, Cooks, Navigator, Society, Friendly, Easter, Sandwich, Hawaii, Maui, Oahu, Kauai, Sumbawa, Floris, Timor, Sula, Palawan, Mindanao, Gilolo, New Britania, Louisiade, New Hebrides, Great Barrier Reefs, King, Kermadec, Sta Cruz, Ceram, Marquesas, Sangir, Nassau.

STRAITS AND CHANNELS.—Bass, Malacca, Sunda, Karimata, Macassar, Torres, Balabak, Cook, Molucca Passage, Foveaux.

CAPES.—York, South, Wilson, Sandy, Howe, Spencer, Catatrophe, Leuwin, Naturaliste, North West, Leveque, Londonderry, Wilberforce, Arnheim, Melville, Flattery, Grafton, Danger, West, North, East, D'Urville, Sambar.

GULFS AND BAYS.—Carpentaria, Australian, Spencer, Encounter, Sharks, Roebuck, Collier, York, Admiralty, Brunswick, Cambridge, Van Dieman, Halifax, Keppel, Shoel, Trial, Hauraki, Papua, Huan, Geelwink, Tomini, Tolo, Boni.

MOUNTAIN RANGES.—Liverpool, New England, Herschel, Darling, Australian Alps, Blue, Gourock, Ashburton, McDonnell, Gawler, Flinders, Peterman, Snowy, Stuart, Kimberly.

MOUNTAIN PEAKS.—Hotham, Lomond, Augustus, Bruce, Vigors Mann, Sea View, Lindsay, Cook, Aspiring, Franklin, Ruapahn, Tongariro, Edgecombe, Earnslaw, Simpson, Owen Stanley, Tomboro, Merapi, Semeru, Ophir, Dempo, Apabaran, Singallang, Panjong, Mauna Loa, Mauna Kea, Haleakala, Kilauea.

LAKES.—Moore, Lefroy, Gairdner, Torrens, Gregory, Frome, Eyre, Amadeus, Salt Lake, Austin, Tawpo, Barlee.

RIVERS.—Murray, Darling, Lachlan, Victoria Murrumbidgee, Murchison, Cooper, Flinders, Ashburton, Condamine, Belyando, Kapooas, Cott, Barito, Ambermo.

SEAS.—Sulu, Arafura, Celebes, Java, South China, Banda, Yellow.

RELATIVE POSITION.—In what direction is Tasmania from New Zealand? from Perth? from Fejee Islands? from Shark's Bay? from Tomboro? from Batavia? from Sidney?

TRAVELS.—Trace a water route from Adelaide to Singapore; to Sidney; to Wellington; to Sarawak. From Melbourne to Cal-

cutta; to Bushire; to Monrovia; to Copenhagen; to Olympia; to Sebastopol; to Kansas City.

MISCELLANEOUS.—Between what parallels does Australia lie? between what meridians? What islands and what waters are crossed by the equator? by 10° south? by 10° north? What meridian passes through Bass Strait? What parallel? What islands are crossed by the 120° east longitude? What season now in New Zealand? in Australia? in Banca? What time is it at Sidney when it is noon in Columbus? What is the time at Singapore when it is 3 P. M. at Paris? What is the difference of time between Sidney and Wellington? Between Sidney and Perth? Between Hobart Town and Bombay? Between Adelaide and San Francisco? When it is 10 o'clock Sunday at San Francisco what is the time at Sidney? What is the length of the longest day at Hobart Town? at Perth? at Cape York? What is the distance in statute miles from Sidney to Perth? to Wellington? to Hobart Town? to Cape York? What, from the Sandwich Islands to San Francisco? to Sidney? to Hong Kong? to Yeddo? Where does the clock show the same hour as at Melbourne?

DESCRIPTION.

POSITION.

1. Oceanica includes the islands of the Pacific Ocean. It extends from 50° south to 40° north, and from 108° west to 95° east.

DIVISIONS AND EXTENT.

2. Oceanica is divided by geographers into three divisions.

(1) *Malaysia*, so called from being inhabited chiefly by the Malays, includes the islands Sumatra, Borneo, Java, (known as the *Sunda Islands*), and Philippine and Spice (known as the *Spice Islands*). Area 760,000 square miles.

(2) *Australasia* so called from lying south-east of Asia, includes New Guinea or Papua, New Zealand, Tasmania and numerous groups of islands as well as the continent of Australia.

(3) *Polynesia*, signifying many islands, embraces the rest of Oceanica, and consists of numerous island groups. Area 150,000 square miles. Area of Oceanica 4,500,000 square miles.

The following table gives the principal islands, together with areas, populations, etc.

NAMES OF ISLANDS.	LENGTH.	BREADTH.	AREA.	POPULATION.
Borneo...	850	680	284,000	2,500,000
Java...	630	35 to 120	50,000	18,335,000
Sumatra...	1,025	60 to 140	177,000	3,000,000
Celebes...	700	60 to 300	70,000	2,000,000
*Philippine...	.....	.....	117,000	7,450,000
Luzon...	500	150	58,000	4,450,000
Mindanao...	300	30 to 275	36,000	732,000
Palawan...	260	30	7,700	..
Banca...	108	64	4,300	54,000
Timor...	300	60	16,000	100,000
Floris...	120	25	3,000	..
Spice...	.....	.....	43,000	332,000
New Guinea...	1,600	30 to 40	275,000	..
Tasmania...	200	200	26,000	104,000
New Zealand...	.....	.....	106,000	350,000
New Caledonia...	220	20	5,000	58,000
†Feejee...	.....	.....	8,000	118,000
‡Sandwich...	.....	.....	7,630	57,000
Australia...	2,500	1,950	2,983,000	2,250,000
Queensland...	.....	.....	678,000	1104,000
New South Wales...	.....	.....	525,000	1584,000
Victoria...	.....	.....	88,000	1824,000
South Australia...	.....	.....	914,000	1213,000
West Australia...	.....	.....	978,000	126,000

*1,200 in all, and 480 inhabited.

†225 islands; 80 inhabited.

‡15 islands; 8 inhabited.

10 census of 1871.

COAST.

3. Australia, like all southern continents, has a regular coast line with few deep indentations. There are 8,000 miles of sea-coast. Many other islands are deeply indented and contain some valuable harbors.

CAPES.

4. *Cape York* extends from York Peninsula into Bass Strait. *Cape Howe* projects from the south-east of Australia, etc.

GULFS AND BAYS.

5. The principal gulfs and bays are Carpentaria on the north of Australia, tributary to the Arafura Sea; Encounter Bay on the south and tributary to the Australian Bight, etc.

SEAS.

6. Several seas exist among the north-western islands; viz., the Arafura north-west of Australia, Java Sea north of Java and south of Borneo. Other seas are Sula, Celebes, Banda, etc.

CHANNELS, STRAITS, ETC.

7. *Bass Strait* separates Australia from Tasmania and connects

the Pacific with the Indian Ocean. The *Torres Strait* separates Australia from New Guinea, etc.

NAMES OF STRAITS.	WIDTH.	LENGTH.
Bass,.....	150	260 miles
*Torres,.....	80	.....
Sunda,.....	70	100 miles
†Malacca,.....	55 to 200	520 "
Macassar,.....	70 to 240	350 "

*Torres discovered it in 1606.

†Dangerous.

ISLANDS.

8. The principal islands have been given. (Let the pupil locate as many as he is able from memory.)

PENINSULAS.

9. There are a number of Peninsulas on several islands, but the names are not generally known. York Peninsula is the most important peninsula of Australia; it projects from the north-eastern part and is about 500 miles long. The soil is poor.

GENERAL CHARACTERISTICS OF THE SURFACE.

10. *Australia* resembles *Africa* in its surface; mountains extend along the coast forming as it were a huge trough in the interior. There is some low marshy land along the coast in a few places. The interior has been but partially explored, and is said to be an immense plain almost altogether sterile.

Tasmania, *New Zealand* and the *Sunda Islands* have a rough, mountainous surface.

The *Sandwich* and many other islands present an exceedingly rough exterior. Many of the islands of the Pacific are *volcanic*, and send forth terrific volumes of lava, smoke, and ashes. Many are evidently built up by myriads of corallines, which are sea-animals so small as to be scarcely observed by the naked eye. These animals are found only in tropical waters where the temperature is not less than 68° Fah.; they cannot exist at a greater depth than 120 feet, nor above water, although many of the islands are several thousand feet high from their base.

The *coral island* is an aggregate of stony cells composed of carbonate of lime, and these cells are the skeletons of the coral animal. The coral animal *builds perpendicularly* at a rate of about one inch in a century.

The *bed of the ocean* sank about as rapidly as the coral built upward, and thus, in course of time, these coral islands became very high. When they reached the surface, the coral died, and the tops of the islands were disintegrated by the action of the waves, a soil was formed, winds and currents brought seeds, animals, and even man himself, and in this way became the abode of human beings.

MOUNTAIN RANGES.

11. The *Snowy* range trends through the island of New Guinea and is considered very high.

The *ranges of Australia* are not very high; those in the south-east are the highest; the principal are the Liverpool, New England, and Australian Alps. They are nearly as high as the Apalachian.

MOUNTAIN PEAKS.

12. Mt. Hotham the highest peak of Australia is in the south-eastern part. There are no volcanoes in Australia, but on the islands they are numerous.

Tomboro on the island of Sumbawa is next to *Cotopaxi* the most terrific volcano on the globe.

During the fearful eruption of 1815, ashes fell in such enormous quantities at a distance of forty miles that houses were crushed beneath the weight; at a distance of 240 miles the ashes covered the ground one and a half inches; and at a distance of 800 miles the sea was so covered that a crust was formed upon it.

The volcanoes of *Mauna Loa* and *Kilauea* in Hawaii are notable examples of volcanic activity.

Their craters are the largest in the world and occasionally streams of melted lava escape from them and roll to the sea like rivers of fire, leveling forests and everything that comes in their way.

The most remarkable instance of this kind took place in 1840, when a stream of lava from one to four miles wide plunged into the sea, for three weeks; during which time, at a distance of forty miles, fine print could be read at midnight, by its light.

MOUNTAIN PEAKS.	HEIGHT.	MOUNTAIN PEAKS.	HEIGHT.
Tomboro,	9,000	Hook,	13,200
Hotham,	7,500	Franklin,	10,000
Ben Lomond,	5,000	Tangariro,	6,500
Mauna Loa,	13,760	Egmont,	8,270
Mauna Kea,	13,950	Edgecomb,	2,500
Ophir,	13,800	Owen-Stanley,	13,000

Ophir, an isolated peak 5,690 feet high, and 45 miles E. N. E. of Malacca, is rich in gold at its base, and some have thought that Solomon obtained the "Gold of Ophir" for the temple, at this place.

PLAINS.

13. The greater portion of Australia is a plain. In the interior is a desert tract called "*Stony Desert*." A belt of land from 40 to 300 miles wide lies between the mountains of Australia and the sea. The widest place is in the south-east.

OBJECTS OF INTEREST.

14. Java is a land of wonders. The "*Poison Valley*" about one-half mile around, is held in horror by the natives.

Every living thing that enters it drops dead, and the bottom is covered with the skeletons of dogs, deer, birds and even men who have incautiously entered it. It is filled with carbonic acid gas.

There is *another crater* in which tigers and other animals have been killed by the sulphurous exhalations.

At the east end of the island there is in the crater of a volcano a *small lake* so strongly impregnated with *sulphuric acid* that fish cannot live near its mouth where it empties into the sea; besides numerous Hindoo monuments of antiquity are found.

Sumatra is regarded interesting because of its numerous volcanoes; more than 50 active volcanoes are found here.

Australia is remarkable for its animals.

We find here the most beautiful birds, but they do not sing; *birds* without feathers, an animal with the bill of a duck and the body of an otter, called the *ornithorhynchus*; *flowers* of exquisite colors, but with no fragrance, while the leaves of many trees are highly aromatic; *pears* with the stem on the large end; *cherries* with the stone on the outside; *trees* that shed their bark instead of their leaves, and whose leaves give no shade and do not vary in color with the seasons; *bees* that do not sting; black swans and white eagles.

Some of the islands abound in *fine mountain scenery*. In the island of New Guinea we find the *bird of paradise*, the *lyre bird*, perhaps the most beautiful birds that are known.

LAKES.

15. There are no lakes worthy of mention except those of Australia; and they are *shallow* and mostly small in size, though in some places numerous. Many of them dry up entirely during the dry season. *Lake Torrens* is 150 miles long, 30 wide, and has an area of 4,000 square miles.

RIVERS.

16. The rivers of Australia like those of Africa are broad and shallow. Many of them lose themselves in the sand.

The *Murray* is the largest; it is 1,600 miles long and drains a basin of 500,000 square miles. It is navigable during the greater part of the year and for the greater part of its course.

The *Darling* 1,160 miles long, is its principal tributary. It is also navigable for small vessels.

Murrumbidgee is 1,350 miles long and is navigable nearly to its source.

The rivers of the islands are unimportant. There are several rivers which empty into the gulf of Carpentaria that are navigable for short distances.

SOIL.

17. In most of the islands the soil is very fertile, except in the mountainous parts.

A *narrow belt* of Australia along the coast, about 40 miles wide at the north and increasing in width to 300 miles in the south-east is extremely fertile, but on the whole better adapted to grazing than to tilling.

The *interior* is sandy and sterile.

Victoria seems to be the most productive province of all the continent.

"The plough might be driven," says Sidney, for 100 miles in a straight line, turning up a rich mould along the whole tract."

Vast tracts of well watered land are covered with heavy timber.

"*Pasture lands* extend for hundreds of miles—now ascending the mountain slopes to their very summits; here spreading out into vast plains, and there undulating gently, or running over rough hills, or broken with rocky ranges, and ending in deep gullies, sandy or stony deserts, or marshes."

CLIMATE.

18. *Java* and some of the other islands are unhealthy along the coast, but pleasant and healthful in the interior.

The *East Indies* are frequently visited by severe storms.

The *climate of Australia* is singular; the country is subject to long seasons of drought lasting for several months or as many years. There are no high mountains in the interior to condense the vapors, and the mountains along the coast drain the air of much of its moisture. Besides the situation of the continent is within a belt over which the great trade currents are advancing from colder to warmer regions, thus taking up moisture rather than parting with it. The winds do not as a rule blow across the continent but along the shore; hence the interior is dry.

Rains often come with great suddenness and with such violence that the river valleys are soon filled to overflowing, and dry basins are converted into lakes. Little lasting benefit results from these rains, as the water disappears so rapidly that the ground is dry almost as soon as it has ceased to rain.

Dense *clouds of dust* occur frequently but do no particular damage. The climate of Australia is remarkably free from *epidemic diseases*, and people generally live to a great age.

The *temperature* is subject to changes, sudden and great, to an extraordinary degree.

Sometimes a variation of 99° occurs in twelve hours, and from 20° to 30° in half an hour. During the day the heat is often excessive, the thermometer sometimes indicating a temperature of 120° or more.

The *rainy season* occurs in the south from March till September; in the north, from November till April.

VEGETATION.

19. In vegetation Australia is as singular as in other respects; very few varieties of trees and plants are native.

The *Eucalyptus* has some 400 varieties, and is regarded as very valuable for its wood. One variety is believed to be the largest tree in the world.

The eucalyptus trees have the power of absorbing malarial poisons from the atmosphere, and are planted in other countries in low, marshy grounds to purify the air. Many parts of Italy, formerly uninhabited, because of the malarial poison arising from the soil, have been made quite healthy by these trees.

There are *no native fruits* except a few small and almost worthless berries.

All the grains and fruits which have been introduced do well. Wheat, corn, barley, cotton, sugar cane, oranges, lemons, etc., are cultivated with perfect success.

The *East Indies* produce nutmegs, cloves, pepper, cinnamon, and other spices, besides coffee, and all the various tropical fruits.

MINERALS.

20. Australia ranks high in the production of *gold*; Victoria and New South Wales are richest in this metal.

Copper is found in Victoria and South Australia.

Good *iron ore* and excellent *coal* are abundant in the eastern part.

Tin exists in large quantities in the island of *Banca* as well as in Eastern Australia.

Lead, *silver*, and *precious stones* are found at various points.

MANUFACTURES.

21. The manufactures of this portion of the world are yet very limited. A few establishments have recently been erected for the manufacture of cotton and woolen goods.

It is the policy of the British government to make Australia a country producing raw material, and in turn to supply it with her manufactures.

The islands are inhabited chiefly by barbarous or half-civilized races and their manufactures are not important.

We will give here the principal productions of the largest islands.

Borneo; diamonds, mercury, salt, petroleum, tin, copper, iron, nutmegs, cinnamon, cloves, rattans, Java coffee, indigo, pepper, cotton, rice, cochineal, tea.

Sumatra: granite, marble, porphyry, sulphur, petroleum, gold, copper, lignite, saltpeter, and tin.

Tasmania: coal exists in nearly all parts; gold, lead, copper, iron, and precious stones, in some places.

New Guinea: pearls, gold, fine woods, rosins, Bamboos.

New Zealand: coal, copper, cattle, sheep, swine, horses.

New Caledonia: great mineral wealth.

Sandwich: bread-fruit, sugar cane, sandal-wood, arum, and tropical fruits.

Feejee: tropical fruits, tobacco, cotton, and mother-of-pearl.

COMMERCE.

22. The commerce of the East Indies is important. Coffee, tropical fruits, spices, gold, tin, drugs, and fine woods are exported. Gold is the most important article of *export* from Australia, and next to gold, the most valuable is *wool*; wheat and coffee are exported from South Australia.

The *imports* are cottons, woolens, hardware, locomotives, cars, rail-road iron, agricultural implements.

In all the islands and Australia the commerce is carried on chiefly by foreigners. The commerce of the United States with these islands is rapidly growing in importance. The *exports* of Australia are \$125,000,000 annually and the *imports* are \$120,000,000.

NATURAL ADVANTAGES.

23. (Let the pupil give the natural advantages according to preceding models.)

INTERNAL IMPROVEMENTS.

24. *Telegraph lines* connect all important places on the islands and by the submarine cables Australia and the principal islands have communication with all parts of the world.

Railroads are being built so rapidly that Australia has already several thousand miles completed. The larger islands have railways penetrating their interior and crossing them from one side to the other. They are built chiefly by foreign capitalists. In the civilized portions, the people live in good substantial houses, but on many of the islands the people build their houses on stilts or posts.

But few good *wagon roads* and *bridges* exist.

Nowhere in the world except in our own United States has there been such rapid growth of cities as in Australia. People from all parts of the world have been drawn hither by the reports of the vast gold fields, and her cities and country have developed as if by magic.

ANIMALS.

25. The native animals of Australia are but few; the chief are the wild dog, the only carnivora, the kangaroo, about 20 varieties of bats, monkeys, and ants of all sizes; some of the latter are an inch long, and live in immense hillocks; their bite is very painful. The most beautiful birds are found on some of the islands, especially on New Guinea.

In *Malaysia* there are many small animals and insects whose bite is very poisonous.

The *domestic animals* are buffaloes, small horses, hogs and goats. The elephant, tiger, leopard, rhinoceros, hippopotamus, and crocodile, are common.

INHABITANTS.

26. The great majority of the inhabitants of Australia are emigrants from Great Britain.

The *native population* numbering about 50,000 are a very degraded race; they are black, with curly hair, but not the crisp wool of the negro, and their lips less protruding. They go entirely naked for the most part, and live mainly by hunting and fishing, but eat worms, insects, and other repulsive things.

The *whites* are held by them in great reverence, as they believe them the reanimated souls of the blacks. They *build fire* by rubbing two sticks together, but they frequently eat their meat raw.

In the *mode of cooking* they dig a hole in the ground, light a fire in it, place in the slain animal and cover with earth; when the fire has gone out the animal is regarded sufficiently cooked.

They throw the boomerang with great skill; it is an instrument shaped like a double edged sword bent to the form of an ellipse; on being thrown into the air it strikes the ground and rebounds toward the thrower. They *bury their dead* in the exact spot where they die, and that place is never inhabited by them again. The inhabitants of *Polynesia* belong to this race.

The *Malays* inhabit *Malaysia*; there were formerly many cannibals and pirates among them, but through the labor of missionaries their condition has been much ameliorated.

POPULATION.

27. Oceanica, 29,102,000; Australasia, 4,600,000; Polynesia, 454,000; Malaysia, 24,048,000; Australia, 2,250,000.

OCCUPATION OF THE INHABITANTS.

28. The people of Australia are engaged chiefly in mining and farming; the raising of sheep and cattle has become an important occupation among the colonists. Agriculture in some form is carried on in nearly all the habitable islands.

The inhabitants of *Java* are engaged to a considerable extent in manufacturing and trading, in the latter occupation they manifest great shrewdness. *Hunting* and *fishing* are the chief employments of the savage tribes.

LANGUAGE.

29. The English language is spoken mainly in the British colonies. A great variety of languages and dialects are spoken among the Malays and barbarous tribes.

GOVERNMENT.

30. The government of Australia is colonial and is controlled by the British. The *governor* of each colony is appointed in England; a *legislative* council and a legislative assembly, are chosen by universal suffrage.

Nearly all the islands are subject to foreign powers and consequently regulated by these powers. The following topic will exhibit the government more clearly.

FOREIGN POSSESSIONS.

31. The *British possessions* are Australia, Tasmania, New Zealand, Feejee Isles, the eastern half of New Guinea, and North-western Borneo.

New Caledonia belongs to France; also Marquesas and the Society Islands.

The Caroline, Ladron, Philippine Islands belong to *Spain*.

The eastern part of Sumatra from north to south, Java, Celebes, Banca, Spice Islands, the southern and eastern parts of Borneo, and the western half of New Guinea belong to the *Dutch*.

EDUCATION.

32. The inhabitants of the *Polynesian islands* are generally savages; of this group the *Sandwich* are the most important.

The people of this island group have lately been civilized, and schools are now generally established. At Honolulu, their capital, nearly all ships sailing between America and the countries across the Pacific, stop; and for this reason these islands have made rapid strides in European and American culture.

Education has not made much progress in *Malaysia*; the people are generally illiterate. The cause of general education has made great progress in *Australia*; the different colonial governments aid in the establishment of schools. Sydney and Melbourne have *universities*.

RELIGION.

33. The great majority of the inhabitants are pagans. The *Europeans* have carried their religion with them wherever they have made settlements. There are many Roman Catholics in Australia, and some Mohammedans, and Jews; but the bulk of the population are the various branches of the Protestant faith.

CITIES.

34. *Batavia* is the commercial emporium of the Malay Islands: it is a very filthy and unhealthy city. The Dutch have introduced many improvements.

Sarawak on the western coast of Borneo carries on considerable trade, chiefly with Singapore.

Hobart Town has a fine harbor and a number of good public buildings.

Sydney, the oldest city of Australia, being founded in 1788, lies on a beautiful and commodious harbor; it is a handsome city, and has great educational advantages—three colleges and a university.

Melbourne is the chief commercial city of Australia.

Adelaide, the capital of South Australia, has numerous public buildings.

Batavia,.....	100,000	Melbourne,.....	282,000
Sarawak,.....	18,000	Adelaide,.....	38,000
Hobart Town,.....	19,000	Perth,.....	5,000
Sydney,.....	224,000	Wellington,.....	21,000
Auckland,.....	29,000	Ballarat,.....	37,000

HISTORY.

35. The *Ancients* had some faint notion of the existence of islands beyond the region which they denominated Farther India; but we have no account of any voyage made in this quarter till the middle of the ninth century, when the *Arab navigators*, in their intercourse with China visited some of the islands of the Indian Archipelago. Of these voyages we have no particular narrative.

The islands appear to have had a native population at the earliest period, and settlements were made among them by the Malay adventurers at different times. *Marco Polo*, a Venetian, who traveled to China through Tartary, toward the end of the thirteenth century, returned to Europe by way of the China sea and Indian ocean. He describes two islands, which he calls *Great* and *Little Java*: these seem to be Borneo and Sumatra.

The *Portuguese* were the first Europeans who began the career of maritime discovery in the east. They arrived in India by the route of the Cape of

Good Hope, in 1498. By the year 1510, they had visited all the islands of the Malay Archipelago, as far as the Moluccas. The *Spanish*, in the meantime, under Columbus and his successors, were pushing their discoveries and conquests in the west, Balboa having discovered the Pacific, in 1513, as elsewhere stated. *Australia* was discovered by the Dutch in 1605 and named by them *New Holland*. The *first settlement* was made in 1788, after a formal possession had been taken by Cook, in the name of the English. This continent was first used as a place of banishment for English convicts, and in 1835 its name was changed to its present name. In the year 1851 gold was discovered, and since this period the development of Australia has been rapid. Large areas of the interior are still unexplored, and of the interior of New Guinea we, in reality, know nothing.

OHIO.

MAP EXERCISES.

Locate the following:—

BAYS.—Maumee, Sandusky.

ISLANDS.—Kelleys, North Bass, Middle Bass, South Bass.

RIVERS.—Scioto, Miami, Little Miami, Maumee, Sandusky, Cuyahoga, Grand, Hocking, Muskingum, Mahoning, Blanchard, Tuscarawas.

CITIES AND TOWNS.—Cincinnati, Cleveland, Columbus, Toledo, Dayton, Springfield, Zanesville, Akron, Sandusky, Mansfield, Youngstown, Chillicothe, Circleville, Xenia, Newark, Lancaster, Lima, Massillon, Canton, Tiffin, Fremont, Steubenville, Galipolis, Marietta, Portsmouth.

MISCELLANEOUS.—What counties border upon Indiana? upon Michigan? Lake Erie? Pennsylvania? What counties are separated from West Virginia by the Ohio river? from Kentucky. Name the counties through which the water-shed passes. Through what counties do the following rivers flow: Scioto, Miami, Maumee, Blanchard, Sandusky, Cuyahoga, Grand, Mahoning, Muskingum, Hocking? Which is the most southern county of the state? the most northern? the most central? What county in the northeast? in the northwest? in the southwest? which is the largest county? the smallest? the most populous? Name the counties in which the ten largest cities are found? Bound your own county, and name its principal streams, towns, and products. What counties are in your congressional district? What large towns on the Scioto? on the Miami? Maumee? Sandusky? Mus-

kingum? Hocking? Name some of the leading railroads. By the scale of miles, what is the distance of the following cities from Cleveland: Sandusky, Toledo, Zanesville, Cincinnati, Steubenville?

DESCRIPTION.

POSITION.

1. This flourishing state belongs to the group of North Central States and is bounded on the north by Michigan and Lake Erie; on the east by Pennsylvania and West Virginia; on the south by West Virginia and Kentucky; and on the west by Indiana.

LATITUDE AND LONGITUDE.

2. It extends from $38^{\circ} 35$ min. to 42° north latitude, and from $80^{\circ} 30$ min. to $84^{\circ} 45$ min. west longitude.

EXTENT.

3. The longest distance east and west is 225 miles; north and south, 205 miles. Area. 40,760 square miles.

DISTANCES.

4. From Columbus on an air line:

Toledo.....	140	Cincinnati.....	115
Sandusky.....	132	Portsmouth.....	88
Cleveland.....	155	Marietta.....	91
Mansfield.....	61	Steubenville.....	131
Springfield.....	41	Zanesville.....	52
Lima.....	52	Canton.....	105

COAST.

5. This State has above 150 miles of coast upon Lake Erie. This extent embraces several harbors.

Sandusky bay, on the west, is twenty miles in length, and from three to four wide; it communicates with the lake by a narrow strait, and affords an excellent harbor.

The *Bay of Maumee* is in the western extremity of the lake. The *harbor of Cleveland* at the outlet of the Ohio Canal, and that of *Ashtabula*, farther east, are frequented by steamboats and other lake craft.

ISLANDS.

6. Kelleys and the Bass islands are the only islands of importance. They are noted for their grapes and wines.

SURFACE.

7. The central portion of this state is a table-land, having an average altitude of 1,160 feet; from this the surface slopes to the Erie basin on the north, and the Ohio on the south.

The highest land is found in Logan county 1,540 feet above the sea-level. The southeastern part of Richland county contains hills 1,475 feet high.

The *northern*, or Erie plain descends more rapidly in ridges which conform to the course of the lake shore.

It is supposed by some that Lake Erie at one time extended to the watershed, and that these ridges mark the successive boundaries of the lake.

While there are *no mountains*, the southern and southeastern parts are much broken by rugged hills. In the northern and northwestern parts there are some extensive *marsh regions*.

VALLEYS.

8. There are numerous valleys along the rivers, which are very fertile.

NATURAL CURIOSITIES.

9. Among these are the *ancient mounds* near Circleville, Marietta, etc.; the deep canons of the Hocking river, and the natural fountains of Bryan, Williams county. Some of the scenery in the hilly regions is fine; however, Ohio is not, in general, noted for her natural curiosities.

MINERAL SPRINGS.

10. The *Yellow Springs*, in Green county, sixty-four miles north of Cincinnati, have been used with advantage in cases of chronic diseases. The waters are chalybeate, and have a temperature of 52°.

The *Delaware White Sulphur Springs* are similar to the sulphur springs of Virginia.

Those of *Green Springs* in Seneca county have become famous for their medical qualities.

LAKES.

11. Lake Erie is about 240 miles long with an average breadth of forty miles, though in the widest place it is 58 miles. The greatest depth is 270 feet; the average depth is 120 feet, and the surface is 565 feet above the sea. It is subject to violent storms at some seasons of the year.

There are several *artificial lakes* or reservoirs in the interior; the largest are Saint Marys and Laramie; the former is the largest of its kind in the world, covering an area of 17,000 acres; it is a feeder to the Miami canal.

RIVERS.

12. Ohio is well watered. The rivers flow from the watershed to the lake and to the Ohio. The latter washes the southern border of the State, affording great advantages for navigation. The rivers emptying into this are the Miami, Little Miami, Scioto, Hocking, Muskingum.

The *Maumee*, Sandusky, Cuyahoga, and Grand river are the largest emptying into the lake.

The only navigable rivers within the State are the *Maumee*, for large boats as far as South Toledo, and sixty miles for smaller boats; the Scioto to Columbus, 130 miles; and the Muskingum to *Dresden*, 95 miles.

RIVERS.	LENGTH.	RIVERS.	LENGTH.
Ohio,.....	950 miles	Muskingum,.....	120 miles
Miami,.....	200 "	Maumee,.....	180 "
Scioto,.....	200 "	Sandusky,.....	150 "
Hocking,.....	125 "	Cuyahoga,.....	100 "
		Grand,.....	100 "

The last named river is celebrated for its picturesque valley.

SOIL.

13. Nine-tenths of the surface of this State is susceptible of cultivation. The intervals of rivers are highly fertile. In the interior are large tracts of the most fertile land in country.

The *prairies* produce no timber except a few scattered trees, and now and then a small grove. Some of the lands which were formerly called *barrens*, are found to be the best land in the State.

The *Marshy tracts* have an excellent soil and will ere long become the finest farming land of the country. The rugged hillsides have a thin and sterile soil.

CLIMATE.

14. On account of the general elevation of the surface, the temperature is several degrees lower than in the Atlantic regions in the same parallels. The climate is salubrious, but subject to extreme changes. The *winters* are often severe, and the Ohio has been frozen at Cincinnati for two months. The summer is subject to *tornadoes*, but the autumn is always temperate, serene and pleasant.

In the *southern part* the climate is more equable than in the interior and there is but little snow; in the north, the snows are deep and there is much sleighing in winter.

The mean annual temperature in the northern part is 50°; in the central part, 51°; and in the southern part, 54°. The average rainfall is 32 inches along the lake, and 44 inches at Cincinnati.

The *lowlands* are subject to fevers and ague.

VEGETABLE PRODUCTIONS.

15. Ohio occupies a leading position in nearly every branch of agricultural industry. The *Western Reserve* is famous for its stock and dairy products. Wheat, corn, oats, barley, rye, tobacco, potatoes, are immense crops. Apples are raised everywhere, but most abundantly in the Miami Valley and Western Reserve.

It also ranks among the first in the value of its live stock, butter, cheese and wool. *Extensive vineyards* occur in the southwest and on the shores of Lake Erie with its islands.

Owing to the influence of the lake, frosts do not happen on the islands and along the shore, till quite late in the fall, so that many delicate varieties of grapes can be produced.

The *forest trees* are oak, hickory, chestnut, beech, maple, walnut, sycamore, etc

MINERALS.

16. The four most important of all mineral productions—coal, salt, iron, and limestone—abound.

The *iron district* covers an area of about 10,000 square miles and with the coal measures, occupies the eastern and southeastern parts of the State.

The *coal-fields* cover an area of 11,000 square miles and contain some of the finest seams yet discovered. Marble and free-stone, well adapted for architectural purposes, and gypsum occur.

Salt Springs are numerous and the brine is strong.

The northeastern part of the State shares the rich *oil regions* of Pennsylvania.

MANUFACTURES.

17. Ohio ranks as the fifth State in the Union in the value of her manufactured products. Her iron works are the most important. The *domestic fabrics* are considerable, and there are large manufactures of cotton and woolen goods, glass, paper, lumber, cars, carriages, machinery, leather, furniture, boots and shoes, harness, cement, paints, etc. In the manufacture of agricultural implements, Ohio surpasses every other State except Illinois.

COMMERCE.

18. The advantages for trade which are secured by the local position of this state, may be perceived by glancing at the map. The *Ohio* affords direct intercourse with all the country in the valley of the Mississippi; while by means of Lake Erie on

the north, it communicates with Canada and New York. Many *trunk lines* of railway cross the State and thus afford an outlet for the interior to all important marts of the country. Cincinnati, Cleveland, Toledo, and Sandusky are *ports of entry*. The commerce of Ohio is very extensive.

NATURAL ADVANTAGES.

19. The pupil should be required to give the natural advantages according to preceding models.

INTERNAL IMPROVEMENTS.

20. The *first railroad* (the Mad River Road) was begun in 1835. In 1882 there were 7,890 miles, ranking next to Illinois.

This State has 654 miles of *canals* proper, 36 miles of feeders, and the Muskingum has been made navigable 95 miles to Dresden.

The "*National Road*" passes through the State from Wheeling westward.

Several fine *bridges* cross the Ohio and other streams.

Institutions of public charity are well provided.

ANIMALS.

21. The original wild animals are seldom met with at present. Deer, bears, minx, wild cats, panthers, are occasionally seen in the sparsely settled regions.

Foxes, rabbits, squirrels, raccoons, opossums, groundhogs, polecats, weasels, muskrats, bats, moles, grouse, pheasants, ducks, quail, snipe, hawks, owls, turkey buzzards, and crows are common.

Singing birds are numerous.

Of reptiles there are several species of snakes, frogs, toads, lizards, and tortoises.

The *Maumee* is said to be the most prolific fishing stream in the United States.

INHABITANTS.

22. The settlers of this State were mainly from New England, and society here is of a somewhat New England character. There is, however, a large foreign population, principally in the cities.

The total number of inhabitants in 1880 was 3,198,000.

OCCUPATION.

23. *Agriculture* is the leading pursuit. *Manufacturing* and *mining* are diligently carried on. *Commerce* and the fisheries give employment to many thousands.

LANGUAGE.

24. This is chiefly *English*, but there are many *German* settlements whose people use their native language. The *Welsh* is used in a few localities.

GOVERNMENT.

25. The State is divided into 88 counties. The governor is elected for a term of two years. The general assembly consists of a senate of 36 members and a house of 105 representatives, both elected for two years. The State is divided into nine *common pleas* districts, each of which is divided into three parts, each part electing one or more judges. The State is also divided into two United States judicial districts, the Northern and Southern, the courts being held in Cincinnati, Cleveland and Toledo.

According to the last apportionment, Ohio has twenty-one congressional districts. The enacting clause of the laws is as follows: "Be it enacted by the General Assembly of the State of Ohio."

EDUCATION.

26. The education of the youth is well cared for. No State affords superior advantages. "The whole system is presided over by a State board of examiners, with county secretaries, by a State commissioner, and by local superintendents, and boards of education. More than one million of children attend school.

Ohio has thirty-six *colleges* and *universities*, two *law schools*, ten *schools of medicine*, and nine of *theology*. Delaware, Oberlin, and Wooster, are the principal colleges of the State.

The Miami university at Oxford, Ohio university at Athens, and the Ohio State university at Columbus, are supported by the State.

There are no *State normal* schools, but several of importance are conducted by private enterprise, prominent among these, are the Northwestern Ohio Normal School, at Ada, and the National Normal at Lebanon.

RELIGION.

27. The principal religious denominations, beginning with the most prominent, are as follows: Methodist, Presbyterian, Baptist, Christian, Lutheran, Roman Catholic, German Reformed, Congregational, Evangelical and Protestant Episcopal.

CHIEF TOWNS.

28. *Cincinnati*, the "Queen City of the West," is the largest and most important city in the State. It is distinguished for its trade, schools, printing and public gardens.

Cleveland is pleasantly located upon Lake Erie, and is the second city in the State.

It is a beautiful city, well paved and lighted. Euclid avenue is pronounced the finest street in the world. It has extensive manufactures and a large trade.

Columbus, the capital, is situated on the Scioto river, near the center of the State.

It is well laid out with wide streets and possesses superior advantages for inland trade. The State house, city hall, the imbecile, and lunatic asylums are magnificent structures.

Toledo is a very flourishing city near the mouth of the Maumee river. It has extensive trade, both on the lakes and inland.

The manufacturing establishments include the largest wagon works in America, besides numerous planing mills, sash and blind factories, foundries, machine shops, etc.

Dayton, on the Miami, is celebrated for the extent and variety of its manufactures.

The public buildings are elegant, among which may be mentioned the court-house, built of white marble quarried in the vicinity. Great taste is displayed in the architecture of the private residences and the embellishment of the adjoining grounds.

Springfield, a beautiful city, the county seat of Clark county, is noted for its manufacture of farm implements, flour, iron castings, woolen goods, and carriages.

Sandusky is situated on a bay of the same name. Its wharves are constantly crowded by steamboats except in winter.

The land upon which it is built rises gradually from the shore, which gives the city a fine appearance from the bay. It is built upon an immense bed of valuable lime-stone, out of which many of the buildings of the city are constructed.

Zanesville, *Mansfield*, *Akron*, *Massillon*, *Lima*, *Youngstown*, *Xenia*, and *Newark* are thriving manufacturing towns and centers of trade for rich farming communities.

The following gives the population of the the principal towns of the State:

TOWNS.	POP.	TOWNS.	POP.	TOWNS.	POP.
Cincinnati.....	255,000	Youngstown.....	15,000	Fremont.....	8,400
Cleveland.....	160,000	Canton.....	12,000	Bellaire.....	8,000
Columbus.....	52,000	Hamilton.....	12,000	Lima.....	8,000
Toledo.....	50,000	Steubenville.....	12,000	Tiffin.....	8,000
Dayton.....	39,000	Portsmouth.....	11,000	Lancaster.....	7,000
Springfield.....	21,000	Chillicothe.....	11,000	Delaware.....	7,000
Zanesville.....	18,000	Mansfield.....	10,000	Massillon.....	6,900
Akron.....	16,000	Newark.....	9,600	Urbana.....	6,300
Sandusky.....	16,000	Ironton.....	9,000	Circleville.....	6,000
Defiance.....	6,000	Norwalk.....	5,800	Piqua.....	6,000
Galion.....	5,800	Pomeroy.....	5,600	Wooster.....	6,000
East Liverpool....	5,600	Mount Vernon....	5,500	Alliance.....	4,600
Findlay.....	5,500	Marietta.....	5,400	Kenton.....	4,400

HISTORY.

29. The territory belonging to Ohio, including that of Indiana, was claimed by Virginia as embraced in her original patent. The north eastern portion along Lake Erie, containing what was called the *Western Reserve*, was claimed by Connecticut. Virginia ceded her territory to the United States in 1787, reserving a small portion for the payment of some State debts. The Connecticut claims were finally extinguished in 1800.

The *French* preferred a title to this whole territory, but they made no permanent settlements in Ohio. The country remained in the possession of the Indians till April 7, 1788, when General Rufus Putnam, with a party from New England, planted a little colony at the mouth of the Muskingum, where *Marietta* now stands.

Another settlement was made the following year, at Columbia, six miles above the present City of Cincinnati. Some French immigrants established themselves at Gallipolis in 1791. The country was much disturbed by Indian hostilities. After the disastrous campaign of General Harmer, in 1790, and that of General St. Clair in 1791—he being defeated, with great loss, in the western part of the State—many of the affrighted inhabitants removed to Kentucky. But in 1795, the savages were effectually subdued by General Wayne, and from this time we may date the unexampled prosperity of the State.

In 1781, Ohio, together with Indiana, etc., was placed under a territorial government by congress: the whole being called the Territory North-West of the Ohio. The *first territorial legislature* met at Cincinnati, in 1799, under General Arthur St. Clair, the first governor. For a long period the fame of this region for richness of soil and amenity of climate drew multitudes from the Atlantic country.

In 1802, Ohio was erected into a State and admitted into the Union. The *first General Assembly* met at Chillicothe in March, 1803 and Edward Tiffin was elected governor. In 1816 the capital was removed to Columbus. In this year the crops of New England were cut off, and the most extraordinary impulse was given to emigration. Not only families but whole villages departed for this land of promise. The great thorough-fares to the west were crowded with troops of people, loaded with their entire stock of furniture. Thus a State but eighty years old has grown to a population of 3,200,000, and whose larger cities rank with the great cities of the earth. During the rebellion Ohio furnished 317,000 troops to the Union army.

EXPLANATION OF GEOGRAPHICAL NAMES, ETC.

This chapter is not intended to be exhaustive, but it is believed much will be found here of use and interest, and it is hoped that

it will lead to a more searching study, not only of the subject herein mentioned, but of the whole subject of geography in general.

Pupils should be required to give the meanings of geographical names when possible, and to explain the various current terms and expressions pertaining to the subject. To assist the pupil in this delightful work, is the object of this chapter.

ORIGIN OF THE NAMES OF THE STATES.

Maine was so called as early as 1623 from Maine, in France, of which Henrietta Maria, queen of England, was proprietor.

New Hampshire was the name of the territory conveyed by the Plymouth Company to Captain John Mason, by patent, November 7, 1629, with reference to the patentee, who was governor of Portsmouth, in Hampshire, in England.

Vermont was so called by the inhabitants in their Declaration of Independence, January 19, 1777, from the French *verts monts*, "Green Mountains."

Massachusetts was so called from Massachusetts bay, and that from a tribe of Indians in the neighborhood of Boston. The tribe is thought to have derived its name from the Blue Hills of Milton. "I have learnt," says Rogers, "that Massachusetts was so called from the Blue Hills."

Rhode Island was so called in 1664, in reference to the island of Rhodes, in Narragansett bay.

Connecticut was so called from the Indian name of its principal river. Connecticut is a Mocheakannen word signifying "long river."

New York received its name in 1664, in reference to the Duke of York and Albany, to whom this territory was granted by the king of England.

New Jersey was named in 1664 from the island of Jersey, on the coast of France, the residence of Sir John Carteret, to whom the territory was granted.

Pennsylvania was so called in 1681, after William Penn, and *sylvia*, meaning forest, Penn sylvia signifying Penn forest.

Delaware was so called in 1703, from Delaware bay, on which it lies, and which received its name from Lord De La Ware, who died on the bay.

Maryland received its name in honor of Henrietta Maria, queen of Charles I in his patent to Lord Baltimore, June 30, 1632.

Virginia was so called in 1584, after Elizabeth, the Virgin Queen of England.

Carolina was so called by the French in 1564, in honor of King Charles IX of France. It was afterwards divided into North and South Carolina.

Georgia was named in 1732, in honor of King George II.

Alabama was so called in 1614 from its principal river, meaning "here we rest."

Mississippi was so called in 1800 from its western boundary. The Mississippi is said to denote "the river formed by the union of many."

Louisiana derived its name in 1679, in honor of Louis XIV. of France.

Tennessee derived its name in 1796, from its principal river. The word Ten-as-se is said to signify a carved spoon.

Kentucky was named in 1792 from its principal river.

Illinois was so called in 1809, from its principal river. The word signifies "the river of men."

Indiana was so called in 1809, from the American Indians.

Ohio is an Indian word meaning "beautiful." The State derived its name in 1791, from its southern boundary.

Missouri obtained its name in 1804 from its chief river, an Indian name meaning "muddy water."

Michigan was so called in 1802, from the lake on its border. It is an Indian name, meaning "a river for fish."

Arkansas was so called in 1812 from its principal river. An Indian name.

Florida was so called by Juan Ponce de Leon, 1512, because it was discovered on Easter Sunday, (La pascua de flores, the pass-over of flowers.)

Wisconsin was named from its principal river, an Indian name meaning "wild rushing river."

Iowa obtained its name from its chief river. It is also an Indian word signifying "the sleepy lines."

Minnesota is another Indian word meaning, "the whitish water."

California, a Spanish word, and named from an aim of the Pacific ocean.

Texas, a Spanish word, applied to the Republic. Signifies "friends."

Kansas is an Indian name, meaning "the smoky water."

West Virginia, so called after Virginia.

Nevada is a Spanish word, meaning "white as snow."

Nebraska derived its name from the Nebraska river, an Indian name meaning "flat water."

Dakota is an Indian word meaning "allied."

Colorado means red, colored, a name derived from the Indians.

Oregon means "river of the west." Another Indian name.

NAMES OF COUNTRIES.

Europe signifies a country of white complexion; so named because the inhabitants were of lighter complexion than those of Asia and Africa.

Asia signifies between, or in the middle, from the fact that geographers place it in their books between Europe and Africa.

Africa signifies the land of corn or ears. It was celebrated for its abundance of corn and all sorts of grain.

Siberia signifies thirsty or dry—very characteristic.

Spain a country of rabbits or conies. It was once so infested with these animals that it sued Augustus for an army to destroy them.

Italy, a country of pitch, from its yielding great quantities of black pitch. Calabria, also, for the same reason.

Gaul, modern France, signifies yellow haired, as yellow hair characterized its inhabitants.

Hibernia is the utmost, a last habitation, for beyond this the Phœnicians never extended their voyages.

Britain, the country of tin, great quantities being found on it and adjacent islands. The Greeks called it Albion, which signifies in the Phœnician tongue either white or high mountains, from the whiteness of its shores or the high rocks on the western coast.

Corsica signifies a woody place.

Sardinia signifies the footsteps of men which it resembles.

Syracuse, bad favor, so called from the unwholesome marsh on which it stands.

Rhodes, serpents or dragons, which it produced in abundance.

Sicily, the country of grapes.

Scylla, the whirlpool of destruction.

Ætna signifies a furnace, or dark and smoky.

NICKNAMES OF THE STATES.

Arizona is called "the Land of the Aztecs."

Arkansas is called the Bear State, and its inhabitants are Tooth-picks or Gophers.

Alabama people are called Lizards, from the great prevalence of this reptile.

California is, on account of its mineral wealth, the Golden State, and its citizens Gold Hunters. It also called "The American France."

Colorado people, from their migratory habits as miners, are called Rovers. The State is known as the "Sanitarium and the Mint."

Connecticut is the Nutmeg State. It is also called Freestone State and the Land of Steady Habits. The natives are designated Wooden Nutmegs.

Delaware is the Blue Hen or Diamond State; its inhabitants are called Muskrats.

Florida is the Peninsular State, and the people who live in it are called Fly up-the-Creeks.

Georgians are nicknamed Buzzards. The State is known as the Empire State of the South.

Illinois has three names, Garden of the West, Sucker State, and Prairie State. Its people are called Suckers.

Indiana is called the Hoosier State, inhabited by Hoosiers.

Iowa is the Hawkeye State, and Hawkeyes dwell therein.

Kansas is another Garden of the West, "The Granary of the World," but its inhabitants are called Jay-hawkers.

Kentucky, in words suggestive of strife in by-gone days, is the Dark and Bloody Ground; but the irrepressible fondness for fun having afterward cropped up, it became known as the Corn Cracker State; its people are Corn Crackers.

Louisiana is called the Creole, and is inhabited by Creoles, or Cree-owls.

Maine is the Lumber, or Pine Tree State, and they who live there are termed Foxes.

Massachusetts is the Bay State, and its people Bay Staters.

Michigan is the Lake State, or Wolverine State. Its inhabitants are Wolverines or Michiganders.

Mississippi is the Bayou State, and its residents are recognized as Tadpoles.

Marylanders are called Craw-thumpers.

Minnesota residents are designated Gophers.

Missourians have been stigmatized as Pukes. The State is known as the Iron State.

Nebraska settlers are styled Bugeaters. It is the Black Water State.

Nevada, it is said, on account of wild sage brushes and wilder hens that cluster in them, has now for its occupants the name of Sage Hens.

New Jersey is called the Garden State, and its people the Blues, or Clam-Catchers.

New Hampshire is the Granite State; the natives thereof are Granite Boys.

New Mexico has recently become known as "The Old Curiosity Shop of America.

New York is the Empire State, and the Excelsior State. The natives are termed Knickerbockers.

North Carolina is the Old North State, or the Turpentine State; its natives are known as Tuckoes or Tarboilers.

Ohio is the Buckeye State, and the people are termed Buckeyes.

Oregon people are designated Web-feet.

Pennsylvania is honorably designated the Key-stone State. Its inhabitants go by the name Penamites or Leatherheads.

Rhode Island is called Little Rhody. The term Gunflints is applied to the natives.

South Carolina is the Palmetto State, and its natives are Weasels.

Tennessee is the Big Bend State, and is the home of Whelps or Cotton-manies.

Texas is poetically termed the Lone Star State, also the Long Horn Empire. It is tenanted by Bull-heads.

Vermont, as its name implies, is the Green Mountain State, and the Green Mountain Boys is a name given to its natives.

Virginia is the Old Dominion, the Mother of States, and also the Mother of Presidents. Beadles or Beagles is the characteristic title given to the natives.

Wisconsin is the Badger State, and is the home of the Badgers.

The National Park has become "The Northern Wonder Land."

The entire continent itself is Old Stars and Stripes, Uncle Sam, the New World, or Columbia.

POPULAR NAMES OF OTHER PLACES.

Old Mexico is the "Coming Country."

Iceland; the "Land of Frost and Flame, so called because of its icy climate and numerous volcanoes.

"The Ringing Island," a name given to England on account of the music of its many bells.

"Belle France," a popular name applied to France, like "Merry England."

"Northern Bear," a popular appellation of Russia; also called the "Northern Giant" in allusion to its immense size.

"New Grenada," the name by which, for 30 years, U. S. of Columbia was formerly known. It was changed to its present name in 1861.

"Land o' Cakes," a name given to Scotland; because oat-meal cakes are a national dish, especially among the poorer classes.

"Land of Wisdom," a name given to Normandy, in France, because of the wise customs which have prevailed there and the skill in jurisprudence.

"King of Waters," a name sometimes applied to the Amazon river.

"Key of the Gulf"—Cuba, so-called from its position at the entrance to the Gulf of Mexico.

"Lion of the Sea," a name formerly given to the Cape of Good Hope.

"Lake of the Cat," a name given to Lake Erie from the time of its discovery up to the 18th century.

"Little England," a popular name given to the Barbadoes by its inhabitants.

"Lovers Leap," (also called Cape Ducato,) a promontory on the southern coast of Santa Maura, one of the Ionian Islands. The poetess *Sappho* is said to

have thrown herself into the sea from this point, because of the coldness with which her lover reciprocated her ardent affections.

"Bridge of Sighs," a name popularly given to the passage way connecting the palace of the Doge and the state prison; condemned prisoners were transported over this way from the hall of judgment to the place of execution.

"Cradle of Liberty," Faneuil Hall of Boston.

"Devil's Wall," a name given to the old Roman wall separating England from Scotland; because of the strength of the cement and durability of the stone, it was thought to have been built by the Devil. The peasants in the vicinity are said to be in the habit of gathering fragments from this wall to be put in the foundation of their own dwellings, supposing that this will give them durability and solidity.

"Dixie," "an imaginary land somewhere in the Southern States, celebrated in a popular Negro melody, as a perfect paradise of ease and enjoyment." This term is often used to designate the whole South.

"Gog and Magog," popular names for two colossal statues in the Guildhall, London. They are said to be of remarkable antiquity and have been the pride of London from time immemorial. They are 14 feet high.

"Lot and Lot's Wife" are two remarkable columns of basaltic rock on the island of St. Helena, 197 and 160 feet high respectively.

"Egypt," a popular designation of the southern part of Illinois; so named because the inhabitants had the general reputation of being extremely ignorant.—an allusion to the three days of thick darkness over Egypt in the time of Moses.

"Salt River," "an imaginary river up which defeated political parties are supposed to be sent to oblivion" (see Webster's Unabridged Dictionary.)

"Holy Land," a name given to Palestine, the country for a long time the home of God's chosen people.

"Holy Island," a name formerly given to Ireland on account of the great number of saints dwelling there.

"Highlands of Never Sink," the first land seen by those coming into New York on ships; they are along the coast from Sandy Hook to Raritan Bay.

"The Palisades" form a picturesque wall of rock about 400 feet high, just above New York, on the New Jersey bank of the Hudson river, for 20 miles.

"New France," the old name of Canada.

"Niagara of the Eastern Continent," Victoria Falls on the Zambeze river.

"Mother of Rivers," Colorado.

"The Iron Gate" is a series of rapids and whirlpools in the narrows of the Danube, 4 miles below Orsova. The defile is 7,500 feet long, 650 feet wide, with a fall of 16 feet, and a rapidity of 10 feet a second.

"Mason and Dixon's Line," the southern boundary line of Pennsylvania, designed to separate this State from the slave-holding States of Maryland and Virginia. It was run by Charles Mason and Jeremiah Dixon, two English

mathematicians and surveyors, in the years 1763-67. The term came into general use through Randolph during the heated debates on excluding slavery from Missouri.

"Garden of Italy" is Sicily.

"The Boiling Mountain" is Mt. Pichincha. Its *crater* is 2,500 feet deep, the deepest in the world.

"Queen of the Antilles," Cuba, because of her valuable productions, fine harbors, etc.

"John O' Groat House" is the name of a site once occupied by a cottage, and is nearly the most northern point of Scotland. Ferrys go between this place and the Orkney Islands.

POPULAR NAMES OF CITIES.

Boston, the mod'n Athens, or the Hub.	Philadelphia, the Quaker City.
Cairo, City of Victory.	New York, Gotham, or Empire City.
Baltimore, the Monumental City.	Cincinnati, the Queen City.
New Orleans, the Crescent City.	Detroit, the City of Straits.
Indianapolis, the Railroad City.	*Cleveland, the Forest City.
Nashville, the City of Rocks.	St. Louis the Mound City.
San Francisco, the Golden City.	Hannibal, the Bluff City.
Keokuk, the Gate City.	Aberdeen, the Granite City.
Louisville, the Fal's City.	Dayton, the Gem City.
Pittsburgh, the Smoky City.	Alexandria, the Delta City.
Buffalo, Queen City of the Lakes.	Brooklyn, the City of Churches.
Sodom & Gomorrah, Cities of the Plain.	Edinburgh, "Northern Athens."
Rome, Queen of Cities.	London, City of Masts.
Boston, City of Notions.	Jerusalem, City of Peace.
Lowell, City of Spindles.	Baalbec or Heliopolis, City of the Sun.
Athens, City of the "Violet Crown."	Limerick, City of the "Violated Treaty."

Washington, the City of Magnificent Distances.

*Portland, Maine, had been known as the "Forest City" until July 4th, 1866, when one-third of it was burned. The fire was occasioned by a fire-cracker carelessly thrown in a bunch of shavings in a cooper shop, by a boy.

Patterson, N. J., is sometimes called the "Lyons of America," because it has more extensive silk manufactures than any other city in the United States.

Quebec is called the "Gibraltar of America," because of its strong fortress.

"The Eternal City," a popular and very ancient title given to Rome, fabled to have been built under the directions of the gods.

"Little Paris," a popular name sometimes given to Milan of Italy, from its resemblance in gayety to the French capital.

"The Maiden Town," a name given to Edinburgh, from a Monkish fable that it was, at one time the residence of the daughters of Pictish Kings, sent there for protection in times of war.

"Nameless City," Ancient Rome; so called because it had an older and mysterious name which no one dared to pronounce, under penalty of death.

"Bride of the Sea," a popular designation of Venice, in illusion to the marriage of the Adriatic and the Doge.

"City of Homes," Philadelphia, because of the abundance of domestic comforts.

*DERIVATION AND SIGNIFICATION OF GEOGRAPHICAL NAMES.

- Aar, the river.
 Aberdeen, at the mouth of the Dee.
 Abyissinia, a mixed race or people.
 Aen, paradise.
 Adirondack, he eats bark.
 Adrianople, city of Adrian.
 Adriatic, sea of Adrian.
 Afghanistan, the country of Afghans.
 Aguas Calientes, warm springs.
 Agulhas, "needles" from its pointed shape.
 Aix-la-Chapelle, waters of the chapel.
 Aland, water-land.
 Albany, Celtic name of Scotland, (named in honor of the Duke of York and Albany).
 Albion, white island.
 Albuquerque, (LAT.) *alba*, white, and *quer-cus*, oak—white oak.
 Aleutian, a bald rock.
 Algies, the island.
 Alleghany, river of the Alligewi.
 Almaden, the mine.
 Alps, hills white with snow.
 Altai, golden.
 Altamaha, place of the village.
 Amazon, boat destroyer.
 Amsterdam, the dam, or dike of Amstel.
 Andes, copper, or metal in general.
 Anglesy, Englishman's island.
 Androscoggin, a name changed in compliment to Governor Andros, from Amas-kogegan, "fish spearing."
 Annapolis, named in honor of Queen Anna.
 Antigua, old, ancient.
 Antwerp, at the wharf.
 Arabia, land of sunset, land of wanderers.
 Aral, inland, (sea.)
 Archangel, named after Michael, the archangel.
 Arizona, sand hills.
 Ascutney, fire mountains.
 Arkansas, from *Kansas* and *are*, a how.
 Astrachan, the district of a khan.
 Asia, east, lying between
 Atchafalaya, lost water.
 Athabasco, swampy.
 Athens, city of Minerva.
 Atlantic, the sea beyond Mount Atlas.
 Auckland, oak land.
 Australia, southern.
 Austria, eastern empire.
 Azores, a hawk.
 Baalbee, city of the sun.
 Balearic, from *ballean*, to throw, because the inhabitants were noted slingers.
 Babelmandel, gate of tears.
 Babylon, court of Belus.
 Balize, a corruption of Wallace, its discoverer.
 Baltimore, named after Lord Baltimore.
 Baikal, rich lake.
 Baltic, abounding in straits.
 Bangor, high choir.
 Batavia, low plain.
 Baton Rouge, red staff.
 Bavaria, the country of the Boii.
 Belgrade, white city.
 Bellefontaine, fine fountain.
 Belleisle, beautiful island.
 Bergen, mountains.
 Berlin, uncultivated land.
 Bermudas, named after their discoverer, Bermudez.
 Berne, country of bears.
 Biscay, forest.
 Birmingham, "the broom place dwelling."
 Blanco, white.
 Bojador, round cape.
 Bokhara, treasury of sciences.
 Bombay, good harbor.
 Bordeaux, border of water.
 Borneo, land.
 Bosphorus, ox-ford.
 Boston, originally St. Botolph's town.
 Botany Bay, so named from the numerous plants.
 Bothnia, deep sea.
 Brazil, from the Spanish for dye.
 Braz d'Or, golden arm.
 Brest, great port.
 Bristol, the place of a bridge.
 Bucharest, city of enjoyment.
 Buda, named from Buda brother of Attila.
 Buena Esperango, good hope.
 Buena Vista, fine view.
 Buenos Ayres, a good air.
 Bushire, father of cities.
 Cadiz, shut in.
 Cairo, the victorious.
 Calcutta, temple of Kali, goddess of time.
 Cambridge, bridge of the Cam.
 Cameroons, shrimp.
 Canada, a collection of huts.
 Canandaigua, a chosen spot.
 Canary, a dog, from the Lat. *canis*.
 Canaveral, cane plantation.
 Canton, large east city.
 Carmel, vine of God; orchard.
 Casco, crane.
 Caspian, named after Caspii.
 Catskill, place of panthers and lynx.
 Cayuga, long lake.
 Caucasus, white mountains.
 Ceylon, island of lions.
 Chaleurs, bay of heats.
 Champlain, named from its discoverer, Champlain.
 Chatham, village cottages.
 Chattahoochee, painted stone.
 Chautauqua, a foggy place.
 Chandiere, a boiler.
 Chesapeake, great waters.
 Chesuncook, great goose lake.
 Chili, land of snow.
 Chimborazo, chimney.
 Chicago, skunk wild onion.
 China, the middle nation.
 Christiania, named after its founder.
 Circassia, the country of those who cut off heads.
 Cleveland, cliff-land.
 Cobi, desert.
 Coblenz, confluence.
 Cologne, a colony.
 Colorado, red colored.
 Connecticut, upon the long river.
 Copenhagen, merchants' haven.
 Cork, a marsh.
 Cornwall, horn of Gaul.
 Corpus Christi, body of Christ.
 Corrientes, currents.

DERIVATION AND SIGNIFICATION OF GEOGRAPHICAL NAMES.

- Costa Rica, rich coast.
 Cumberland, a land of hollows.
 Cuzco, a level.
 Cyclades, circling islands.
 Dakota, allied.
 Dantzic, village of the Danes.
 Danube, low meadow.
 Darfur, country of the Foorians.
 Deccean, the south.
 Delgado, delicate, sharp.
 Delhi, quicksand.
 Denmark, low country.
 Des Moines, on the mounds.
 Desaguadero, an outlet.
 Dnieper, the upper river.
 Dniester, the lower river.
 Dover, a ferry.
 Dominica, Sunday, named from the day of its discovery.
 Drontheim, home of the throne.
 Dublin, black pool.
 Dunkirk, church of the Downs.
 Dundee, castle of the Tay.
 Dwina, the double river.
 Ebro, foaming or warm water.
 Ecuador, equator.
 Edinburgh, castle of Edwin.
 Elba, white.
 England, land of the angles.
 Erie, wild cat.
 Erzeroum, land of Rome.
 Espirito Santo, Holy Spirit.
 Esquimaux, eaters of raw flesh.
 Ethiopia, land of burnt-faced people.
 Euphrates, to make glad.
 Europe, the west, (from Asia.)
 Faroe, sheep islands.
 Finisterre, land's end, (*finis* end, and *terra* land.)
 Florida, blooming.
 Florence, a flower.
 Fogo, fire.
 Fond du Lac, end of lake.
 Formosa, beautiful.
 France, free country.
 Frio, cold.
 Funen, beautiful country.
 Galapagos, land of turtles.
 Galway, western way.
 Ganges, flowing through earth to heaven.
 Garonne, rapid river.
 Germany, "war men." (*Wehrmæn.*)
 Ghaut, a gate, a mountain pass.
 Gibraltar, (Arab. Jabel al Tarik) mountain of Tarik.
 Glasgow, dark ravine.
 Gracias a Dios, thanks to God.
 Greenwich, green village.
 Guadalquivir, the great river.
 Guadeloupe, a she wolf.
 Hague, a grove, or hedge.
 Hainan, south of the sea.
 Havana, the harbor.
 Havre de Grace, harbor of grace.
 Harti, high land (Ind.)
 Hell Gate, a corruption of the Dutch Horl Gatt, Whirlpool strait.
 Heulopen, run in.
 Hernhut, protection of the Lord.
 Himalaya, abode of snow.
 Hindoostan, land of the blacks.
 Hispaniola, little Spain.
 Hoang Ho, yellow river.
 Hoboken, a tobacco pipe.
 Holland, hollow land.
 Hong-Kong, valley of fragrant waters.
 Housatonic, the river beyond the hills.
 Humber, roaring. (*See Webster.*)
 Iceland, land of ice.
 Illinois, river of men.
 Indus, the sea,
 Iowa, the sleepy ones.
 Ireland, the western isle.
 Irrawaddy, the great river.
 Isle of man, Rocky island.
 Jamaica, a country abounding in springs.
 Japan, a land of sun rise.
 Java, rice.
 Jersey, Caesar's isle.
 Jerusalem, vision of peace.
 Jutland, land of giants.
 Katahdin, the highest place.
 Kearsarge, the high place.
 Kalamazoo. (*See Webster.*)
 Kennebec, long lake.
 Kentucky, at the head of a river.
 Kizil Irmak, red river.
 Kizil Koom, red sand.
 Kordofan, the white land.
 Kurile Islands, the road of sea-weeds.
 Laaland, low land.
 Ladrones, robbers.
 La Paz, peace.
 La Plata, silver.
 Lebanon, the white mountain.
 Leipsic, lime trees.
 Lemberg, city of the lion.
 Liberia, free state.
 Lombardy, long beards.
 Lyon, hill of the raven.
 Macao, entrance to the bay.
 Madeira, woody.
 Madras, university town.
 Majorca, the greater.
 Maladetta, accursed.
 Maldives, thousand islands.
 Manhattan, the town of the island.
 Manitoulin, spirit islands.
 Margarita, a pearl.
 Marmora, marble.
 Melbourne, mill stream.
 Merrimac, swift water.
 Memphremagog, land of abundance.
 Memphis, temple of the good God.
 Mexico, place of *Meritile*, the Aztec god of war.
 Milan, harvest full.
 Milwaukee, rich land.
 Mille lacs, thousand lakes.
 Minnehaha, laughing water.
 Mohawk, men eaters.
 Monadnock, the spirits place.
 Monterey, king's mountains.
 Montevideo, I see a mountain.
 Montpelier, mountains of the young girls.
 Montreal, royal mountain.
 Munich, monks.
 Muskingum, moose-eye river.
 Nankin, southern capital.
 Naples, new city.
 Nazareth, separated.
 Naze, noze, promontory.
 Negropont, black bridge.

DERIVATION AND SIGNIFICATION OF GEOGRAPHICAL NAMES.

Nefchattel, new castle.	Saratoga, place of the miraculous waters in a rock.
Nagara, neck of water.	Saskatchewan, swift current.
Niobar, nine islands.	Schaffhansen, sheep-houses.
Niphon, fountain of light.	Scheneectady, river valley beyond the pines.
Niger, black.	Schoodic, burnt lands.
Norfolk, northern people.	Schuykill, hidden creek.
Norwalk, the middle land.	Sebastopol, city of Augustus.
Notre Dame, Our Lady.	Senegambia, between Senegal and Gambia.
Northingham, the home of cavers.	Shanghai, supreme court.
Nova Scotia, New Scotland.	Shannon, old river.
Nubia, gold country.	Sheboygan, the river that comes out of the ground.
Nyarza, the water.	Sicily, cut off.
Ocmulgee, the rivers.	Singapore, lions.
Onondaga, water course.	Skager Rack, crooked strait or Skagen.
Ohio, the beautiful river.	Skaucateles, very long lake.
Oneda, the people of the beacon stone.	Snechatten, snow cap.
Operto, the port.	Smyrna, myrrh.
Oregon, river of the west.	Sondan, land of blacks.
Orinoco, coiled serpent.	Spitzbergen, peaked mountain.
Orkneys, northern islands.	Sporades, scattered.
Osage, the strong.	Staffa, isle of steps.
Ottawa, the traders.	Stockholm, island formed by piles.
Ouse, water.	Sweden, land of the Suevi.
Palermo, convenient harbor.	Tallahasse, old town.
Palestine, the land of wanderers.	Tallapoosa, swift water.
Papua, frizzled hair.	Tananarivon, city of a thousand towns.
Para, father of waters.	Tannus, a mountain.
Parana, the sea.	Terre Haute, high land.
Patagonia, land of the large feet.	Thian shan, celestial mountains.
Pai-Ho, white river.	Tigri, an arrow.
Pekin, northern capital.	Toledo, generations, families.
Pe-Ling, northern mountain chains.	Toronto, oak trees rising from the lake.
Penobscot, at the rock.	Tortugas, tortoises.
Perdido, lost.	Trebizond, trapezium shaped.
Piscataqua, great deep river.	Trinidad, trinity.
Pisgah, height, hill.	Tripoli, three cities.
Poland, flat.	Umbagog, clear lake, shallow.
Polynesia, many islands.	Ural, a girdle.
Port au Prince, port of the prince.	Utrecht, beyond the passage (of the Rhine.)
Porto Rico, rich port.	Valencia, strong, powerful.
Potomac, place of the burning pine.	Valparaiso, vale of paradise.
Poughkeepsie, pleasant harbor.	Venezuela, little Venice.
Prussia, next to Russia.	Vermejo, vermilion.
Quebec, take care of the rock.	Vienna, dwelling place for the Vends.
Quinebang, long pond.	Villa Rica, rich city.
Rappahannock, river of quick rising water.	Wabash, a cloud driven by an equinoctial wind.
Reikjavik, steam town.	Wachusett, the mountain.
Restigouche, river which divides like the hand.	Wales, west country.
Reyes, kings.	Washita, male deer.
Rio Janeiro, river of January.	Wheeling, place of a head.
Rio Negro, black river.	Winnipeg, turbid water.
Rome, strength.	Winnipiseogee, beautiful lake of the high land.
Sabara, a desert.	Winoski, beautiful stone river.
Salem, peace.	Yang-tse-Kiang, son of the ocean.
San Domingo, holy Sabbath.	Zanguebar, sea-coast of the Negroes.
Sandusky, cold spring.	Zealand, sea-land.
San Salvador, Holy Savior.	Zuyder Zee, south sea.
Santiago, St. James.	
Saone, placid river.	
Siragossa, city of Cesar Augustus.	

*Many of these are taken from Webster's Unabridged Dictionary.

HOW LAKE ITASCA WAS NAMED.

Years ago it was discovered that a certain lake which had long been regarded as the source of the Mississippi, had no claim to this honor. When the true source was discovered, it was pro-

proposed to give it a new name. Two latin words were suggested, "Veritas" and "caput," meaning true head. But it was thought that the name (ver-i-tas-ca-put) was too long, and so it was shortened by striking off the first and last syllables, and thus left Itasca.

Gibraltar was so called in commemoration of the leader of the Saracens, *Jabel Tarik*, (the mountains of Tarik) who landed in Spain, A. D. 710.

Yu-ca-tan, an Indian word meaning, "what do you say?" This was their reply to the Spiniards, when asked the name of the country.

Cape Horn was so named by Shouten, its discoverer, in 1616, in honor of his birthplace, Hoorn, in the Netherlands.

STATISTICS, ETC.

[Some of these figures were obtained after the body of this manual had gone through the press, and while some of them do not agree with those previously given, I thought it best to give the latest here.]

The following have been taken with great care from the most reliable sources.

SALARIES.

- President of the United States—\$50,000 per year.
- Vice President of the United States—\$8,000 per year.
- Each Member of the Cabinet—\$8,000 per year.
- Chief Justice—\$10,500 per year.
- Associate Justice—\$6,000 per year.
- United States Senator—\$5,000 and mileage per year.
- United States Representative—\$5,000 and mileage per year.
- Ministers to Foreign Countries—\$8,000 to \$17,500

CONGRESSIONAL DISTRICTS OF OHIO.

- First and Second Districts—Hamilton county.
- Third—Preble, Miami, and Montgomery.
- Fourth—Darke, Shelby, Mercer, Auglaize, and Allen.
- Fifth—Putnam, Hancock, Wyandot, Seneca and Crawford.
- Sixth—Wood, Fulton, Williams, Defiance, Henry, Paulding and Van Wert.
- Seventh—Green, Clermont, Warren, and Butler.
- Eighth—Clark, Pickaway, Champaign, Logan and Madison.
- Ninth—Knox, Delaware, Morrow, Union, Marion and Hardin.
- Tenth—Sandusky, Ottawa, Lucas and Erie.
- Eleventh—Scioto, Adams, Lawrence, Gallia, Jackson and Vinton.
- Twelfth—Clinton, Highland, Fayette, Brown, Ross and Pike.
- Thirteenth—Perry, Hocking, Fairfield and Franklin.
- Fourteenth—Richland, Ashland, Huron and Lorain.

- Fifteenth—Meigs, Athens, Morgan, Washington and Monroe.
 Sixteenth—Licking, Muskingum, Coshocton, Holmes and Tuscarawas.
 Seventeenth—Belmont, Harrison, Jefferson, Guernsey and Noble.
 Eighteenth—Carroll, Columbiana, Mahoning and Stark.
 Nineteenth—Portage, Lake, Geauga, Ashtabala and Trumbull.
 Twentieth—Summit, Medina, Wayne, and a part of Cuyahoga.
 Twenty-first—The rest of Cuyahoga county.

PRINCIPAL CEREAL PRODUCTIONS OF THE UNITED STATES.

From the Official report of the Tenth Census, 1880.

STATES AND TERRITORIES.	INDIAN CORN	WHEAT.	OATS.	BARLEY.	RYE.	BUCK-WHEAT
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Alabama,	25,451,278	1,529,657	3,639,657	7,281	28,402	363
Arizona,	34,746	136,427	564	239,051		
Arkansas,	24,156,417	1,269,730	2,219,822	1,952	22,586	548
California,	1,993,325	29,017,707	1,341,274	12,579,561	181,681	22,307
Colorado,	455,968	1,425,014	640,900	107,119	19,465	110
Connecticut,	1,880,421	38,742	1,009,706	12,284	370,733	137,593
Dakota,	2,000,864	2,830,289	2,217,132	277,424	24,359	2,521
Delaware,	3,891,264	1,175,272	378,508	52	5,953	5,857
Dis. Columbia,	29,750	6,402	7,440		5,704	
Florida,	3,174,234	422	468,112	210	2,965	
Georgia,	23,202,018	3,159,771	5,548,743	18,662	101,716	402
Idaho,	16,408	510,589	462,236	274,750	4,341	
Illinois,	325,792,481	51,110,502	63,189,260	1,229,525	3,121,785	178,859
Indiana,	115,482,300	47,284,853	15,599,518	382,835	703,105	89,709
Iowa,	275,924,247	31,154,203	50,610,591	4,022,600	1,518,605	166,895
Kansas,	105,729,325	17,321,141	8,180,385	300,271	113,181	24,421
Kentucky,	72,852,263	11,356,113	4,580,738	486,326	668,050	9,942
Louisiana,	9,906,189	5,034	229,840		1,013	
Maine,	960,635	665,715	2,265,575	242,185	26,398	382,701
Maryland,	15,938,533	8,004,864	1,794,872	6,097	288,067	176,667
Massachusetts,	1,797,593	15,768	645,159	80,128	213,716	67,117
Michigan,	32,461,453	35,532,543	18,190,793	1,204,316	294,918	173,062
Minnesota,	4,831,741	34,601,030	23,382,158	2,972,965	215,245	11,756
Mississippi,	21,340,80	218,890	1,959,620	348	5,134	
Missouri,	292,485,723	24,966,627	26,670,958	123,031	535,436	57,640
Montana,	5,649	469,688	9,0915	39,970	420	437
Nebraska,	65,450,135	13,847,007	6,555,875	1,744,686	224,318	17,562
Nevada,	12,891	69,298	186,860	513,470		
New Hampshire,	1,350,248	169,316	1,017,620	77,877	34,938	94,090
New Jersey,	11,150,705	1,901,739	3,710,573	4,091	949,064	466,414
New Mexico,	633,786	706,641	156,527	50,053	240	
New York,	25,875,480	11,587,766	37,575,506	7,792,062	2,634,690	4,461,200
North Carolina,	28,098,839	3,397,393	3,838,038	2,421	285,160	44,668
Ohio,	111,877,124	46,014,869	28,664,505	1,707,129	380,221	280,229
Oregon,	126,862	7,480,010	4,385,650	920,977	13,315	6,215
Pennsylvania,	45,821,531	19,462,405	33,841,439	43,100	3,683,621	3,593,326
Rhode Island,	372,967	240	159,339	17,783	12,997	1,254
South Carolina,	11,767,090	942,358	2,715,505	16,257	27,049	
Tennessee,	62,764,429	7,331,335	4,722,190	30,019	156,419	33,434
Texas,	29,065,072	2,567,760	4,893,359	72,786	25,399	535
Utah,	163,312	1,169,199	418,082	217,140	9,605	
Vermont,	2,014,271	337,257	3,742,282	267,625	71,733	356,618
Virginia,	29,405,661	7,822,501	5,333,181	14,223	324,431	136,004
Washington,	39,183	1,921,322	1,571,703	566,537	7,121	2,498
West Virginia,	14,090,609	4,001,711	1,918,505	9,740	113,181	285,298
Wisconsin,	31,230,579	24,884,689	32,905,320	5,043,118	2,298,512	299,107
Wyoming,		4,674	22,512		78	
Total,	1,754,861,335	459,479,505	407,858,999	44,113,495	19,831,595	11,817,327

THE SIX GREAT POWERS.

Great Britain, United States, Germany, Russia, France, and Austria.

THE SIX LARGEST ISLANDS.

Greenland, 760,000 sq. miles.	Madagascar, 230,000 sq. miles.
Borneo, 286,000 sq. miles.	Sumatra, 170,000 sq. miles.
New Guinea, 250,000 sq. miles.	Great Britain, 89,000 sq. miles.

THE FIVE MOST POPULOUS COUNTRIES.

Russia, 85,000,000.	China, 435,000,000.	Germany, 45,500,000.
British Empire, 240,000,000.	United States, 50,000,000.	

THE FIVE COUNTRIES HAVING THE LARGEST AREA.

Russian Empire, 85,000,000 square miles.
 British Empire, 7,890,000 square miles.
 United States, 3,657,000 square miles.
 Chinese Empire, 4,560,000 square miles.
 Brazil, 3,288,000 square miles.

THE SIX LARGEST LAKES.

Superior 32,000 square miles.	Huron 21,000 square miles.
Michigan 22,000 square miles.	Victoria 30,000 square miles.
Albert 28,000 square miles.	Balkash 17,000 square miles.

POPULATION OF THE SIX LARGEST CITIES.

London 3,832,000.	New York 1,205,000.	Vienna 1,021,000.
Paris 1,989,000.	Canton 1,500,000.	Berlin 1,122,000.

COUNTRIES HAVING MOST MILES OF RAILROAD.—1882.

United States 117,717.	Germany 21,565.	France 15,484.
Great Britain and Ireland 28,468.	Russia 14,613.	

THE SIX MOST DENSELY POPULATED COUNTRIES.

Belgium, 488 per square mile.	China, 261 per square mile.
Holland, 318 per square mile.	Japan, 247 per square mile.
England, 400 per square mile.	Italy, 246 per square mile.

THE GRAND DIVISIONS IN THE ORDER OF THEIR DENSITY
OF POPULATION.

Europe, 85 per square mile.	Oceanica, 9 per square mile.
Asia, 48 per square mile.	North America, 8 per square mile.
Africa, 19 per square mile.	South America, 4 per square mile.

THE COUNTRIES HAVING THE LARGEST STANDING ARMIES.

Russia,	840,000	Germany,	427,000	Austria	292,000
China,	700,000	France,	503,000	Italy,	737,000
G't Britain,	238,000—naval force,		61,000	United States,	25,000

CENSUS OF MANUFACTURES IN THE UNITED STATES.

From the Official Returns of the Tenth Census, 1880.

STATES AND TERRITORIES.	Num- ber of Estab- lish- ments.	Capital.	Number of hands em- ployed.	Value of products.
		<i>Dollars</i>		<i>Dollars.</i>
Alabama,	2,070	9,668,008	10,019	13,565,504
Arizona,	66	272,600	226	615,665
Arkansas,	1,202	2,953,137	4,556	6,756,159
California,	5,885	61,243,784	43,798	116,227,973
Colorado,	599	4,311,714	5,674	14,260,159
Connecticut,	4,488	120,480,275	112,915	185,680,211
Dakota,	251	771,428	868	2,373,970
Delaware,	746	15,655,822	12,638	20,514,438
District of Columbia,	971	3,552,526	7,146	11,882,316
Florida,	426	3,210,680	5,504	5,546,448
Georgia,	3,593	20,672,410	24,875	36,147,448
Idaho,	162	677,215	388	1,271,317
Illinois,	14,549	140,652,066	144,727	414,864,673
Indiana,	11,198	65,742,962	69,508	148,006,411
Iowa,	6,921	33,987,886	28,372	71,645,926
Kansas,	2,803	11,192,315	12,064	30,790,212
Kentucky,	5,328	45,813,039	37,391	75,483,377
Louisiana,	1,553	11,462,468	12,167	24,205,193
Maine,	4,481	49,984,571	52,949	79,825,393
Maryland,	6,787	58,735,684	74,942	106,771,393
Massachusetts,	14,352	303,806,185	352,255	631,511,484
Michigan,	8,873	92,930,959	77,591	150,692,025
Minnesota,	3,493	31,004,811	21,212	76,065,190
Mississippi,	1,479	4,727,600	5,827	7,495,802
Missouri,	8,512	72,507,844	63,995	165,384,005
Montana,	196	899,390	578	1,835,867
Nebraska,	1,403	4,881,150	4,793	12,627,336
Nevada,	184	1,323,300	577	2,179,626
New Hampshire,	3,181	51,112,263	48,831	73,978,028
New Jersey,	7,128	106,226,593	126,038	254,375,236
New Mexico,	144	463,275	557	1,284,846
New York,	42,739	514,246,575	531,473	1,080,638,696
North Carolina,	3,802	13,045,639	18,109	20,084,237
Ohio,	20,699	188,939,614	183,609	348,305,390
Oregon,	1,075	6,284,256	3,424	10,879,982
Pennsylvania,	31,225	474,499,993	387,112	744,748,045
Rhode Island,	2,205	75,575,943	62,878	104,163,631
South Carolina,	2,078	11,205,894	22,128	16,738,008
Tennessee,	4,326	20,092,845	22,445	37,074,886
Texas,	2,996	9,245,561	12,159	20,719,928
Utah,	610	2,656,657	2,495	4,324,997
Vermont,	2,874	23,265,224	17,540	31,354,366
Virginia,	5,710	26,968,990	40,184	51,810,692
Washington,	261	3,202,197	1,147	3,250,134
West Virginia,	2,375	13,883,390	14,35	22,867,126
Wisconsin,	7,674	73,821,802	57,109	128,245,480
Wyoming,	57	364,673	391	898,494
Total United States,	253,840	2,790,223,506	2,738,930	5,369,667,706

RAILROADS OF THE WORLD, 1883.

North America, 117,800	South America, 7,316
Europe, 105,895	Asia, 14,131
Africa, 3,098	Australia, 5,592
Total,	264,826

THE SIX LONGEST RIVERS WITH THE AREAS OF THEIR BASINS.

	Length in miles.	Area of basin in sq. miles.
Mississippi,	4,200	1,197,500
Yangtse Kiang,	3,000	950,000
Nile,	4,000	1,425,000
Amazon,	4,000	2,800,000
Niger,	3,000	800,000
Missouri,	2,908	518,000

HEIGHT OF THE SIX HIGHEST PEAKS.

Everest, 29,000 feet.	Dahwalagiri, 26,826 feet.
Dapsang, 28,279 feet.	Nandi Devi, 25,662 feet.
Kanchinjinga, 28,156.	Sorata, 24,812 feet,

THE SIX MOST COMMERCIAL NATIONS, 1881.

	EXPORTS.	IMPORTS.
Great Britain,	\$1,432,072,000	\$2,056,148,000
United States,	921,781,193	753,240,100
France,	680,129,800	981,500,400
German Empire,	705,375,000	973,200,000
Russia,	410,467,000	395,467,000
Austria,	220,994,000	302,900,000

The most northern town in the world is Upernavik; the most southern town is Punta Arenas.

Number of counties in the United States, 2,347.

Number of postoffices in 1882, 46,231.

Number of miles of telegraph in 1882, 144,000; of the world, 551,000.

National debt, 1882, \$1,918,000,000.

NAVY YARDS IN THE UNITED STATES.

1. Brooklyn Navy Yard, Brooklyn, N. Y.
2. Charleston Navy Yard, Boston, Mass.
3. Gosport Navy Yard, near Norfolk, Va.
4. Kittery Navy Yard, opposite Portsmouth, N. C.
5. League Island Navy Yard, 7 miles below Philadelphia.
6. Mare Island Navy Yard, near San Francisco, Cal.
7. New London Navy Yard, New London, Conn.
8. Pensacola Navy Yard, Pensacola, Fla.
9. Washington City Navy Yard, Washington, D. C.

COUNTRIES CONTAINING THE LARGEST COAL AREAS.

*United States,	193,000 sq. miles.	France,	3,500 sq. miles.
Russia,	30,000 "	India,	1,000 "
Great Britain,	11,900 "	Austria,	1,800 "
Japan,	5,000 "	Germany,	1,770 "
Spain,	3,500 "	Belgium,	510 "

*Other estimates make the coal fields embrace an area of 600,000 square miles, but it is largely conjectural, and in many instances the beds are not workable.

THEOLOGICAL SEMINARIES OF THE UNITED STATES.

DENOMINATIONS.	NO. SEM.	NO. PRES.	NO. STU.	DENOMINATIONS.	NO. SEM.	NO. PRES.	NO. STU.
Roman Catholic,	21	124	1110	Universalist,	2	11	40
Baptist,	21	8	956	United Presbyterians,	2	7	60
Presbyterian,	16	7	675	Methodist Episc. South	2	7	63
Lutheran,	16	51	494	Free-Will Baptist,	2	6	46
Protestant Episcopal,	16	65	278	New Church,	2	4	4
Methodist Episcopal,	15	52	555	African Meth. Episcopal,	1	7	16
Congregational,	11	69	361	Unitarian	1	6	12
Unsectarian,	3	1	153	Reformed Dutch,	1	5	35
Cumberland Presbyterian	3	10	122	Moravian,	1	3	28
Reformed,	3	8	52	United Brethren,	1	3	17
Disciple,	6	1	151				
Total,					142	633	5243

The oldest universities in America are, one in the City of Mexico, and the other in Lima, Peru, established 1551.

MINTS OF THE UNITED STATES.

Philadelphia, Pennsylvania; Carson City, Nevada; San Francisco, California; Denver, Colorado.

ASSAY OFFICES.

New York City; Boise City, Idaho; Charlotte, North Carolina.

THE SEVEN WISE MEN OF GREECE.

Solon. Chilo, Pittacus, Bias, Periander, Cleobulus, and Thales.

THE SEVEN WONDERS OF THE WORLD.

1. The Pyramids of Egypt.
2. The Pharos of Alexandria.
3. The Walls and Hanging Gardens of Babylon.
4. The Temple of Diana at Ephesus.
5. The Statute of the Olympian Jupiter.
6. The Mausoleum of Artemesia.
7. The Colossus at Rhodes.

THE CENTER OF POPULATION.

"What statisticians understand by the term center of population, it may be well to explain, is the point at which equilibrium would be reached were the country taken as a plane surface without weight, but capable of sustaining weight, and the inhabitants distributed over it in number and position as they are found at the time the census is taken, each inhabitant being supposed to be of equal weight, and consequently to exert pressure on the pivotal point in direct proportion to his distance therefrom." According to this mode of computation, the center of population in 1880 was found to be at near Taylorsville, Kentucky, a little village about eight miles west by south of Cincinnati. *New York Tribune*.

"*Cape Cod Ship Canal*" was commenced in 1881, and when completed will cost \$10,000,000. It is eight miles long, and connects Buzzard's bay with Cape Cod bay. The distance between Boston and New York will be shortened about 100 miles.

ATLANTIC CABLE. (1879.)

There are six Atlantic cables—two French—one from Northeastern Massachusetts, and the other from Duxbury, Massachusetts, to St. Pierre, and thence to Brest; the other four extend from St. Pierre and Newfoundland to Ireland.

"*Carrying Coals to Newcastle*" is a proverbial phrase, and means doing a needless thing—taking something where least of all it is needed. Newcastle is a town in Northeastern England, the center of the coal mining region, a place where coals of all things are most abundant. The phrase finds its equivalent in the French, "To carry water to the river," and the Latin "To carry wood to the Forest."

THE ATLANTIS.

According to the tradition of the ancient geographies, a large island lay in the Atlantic west of the northwest of Africa and was said to be very populous, comprising a race of mortals begotten by Neptune of mortal woman. They made war upon the nations of Africa and Europe, but were defeated by the Athenians. The inhabitants finally became desperately wicked, and were overthrown by a deluge. This island is found on ancient maps, and several persons of note have given it endorsement.

THE BAD LANDS.

This is a sterile region 100 miles long and 30 wide in Southeastern Dakota, and extending into Nebraska. The country around is a prairie, and the "Bad Lands" occupy a valley about 300 feet deep, which seems to have sunk away from the rest of the world, and presents one of the most wonderful sights known. It looks like an immense city in ruins—a city surrounded by walls and bastions filled with palaces, gigantic domes, and monuments of the most striking and fantastic architecture.

REFLECTIONS.

We have now come to a place in our study where it is meet to pause and make a few reflections, to see the design of all this majestic system of continents and oceans, of contour and relief, and to behold the goodness and wisdom of God shining through it all.

One great object in study should be to look into the beauties of a thing, to see its designs and adaptation, that we may acquire juster conceptions of the economy of nature, and her God.

Have all the continents, islands and seas been created at random, with no purpose in their arrangement, or do they fulfill some great plan, and so show forth the wisdom of the Creator? It will be our pleasure to dwell upon this theme for a moment. Let us first consider briefly the HISTORICAL FUNCTIONS of the continents.

Asia is called the "*continent of origins*." It is characterized by lofty mountains, extensive plains, extremes of climate, fertile valleys, vast deserts, and barriers separating one region from another. There is hence the greatest diversity of animal and vege-

table life. The valleys produce richly with little cultivation and are capable of supporting vast multitudes of people, and being hemmed in on all sides by pathless deserts and mountain walls of rock, fostered the origin of government, as well as peculiar industries and races of people. The overflowing rivers, the necessary irrigation, and the change of seasons induced forethought and gave birth to useful arts and habits of observation.

This God designed to be the cradle of the human race and the home of its infancy; and here we first find the useful or domestic animals and the grains, fruits, etc., necessary to man's needs. Had the human race been cradled in the almost measureless and fertile plains of America, with no bounds to keep the race together, and no conflicts with nature, man would likely never have risen above the savage state, or would have consumed himself in war.

There were four ancient *centers of culture*--China and Amoo Daria, the Euphrates and Tigris basins, the Ganges and Indus, and the Nile.

Europe shows a great diversity of structure, smaller areas, less extremes of climate, and more fertile soil than Asia; besides vast resources in water communication and in minerals. It is especially fitted to foster the development and progress of different nations; in every way to give the fullest expansion to commerce, manufacturing and the arts. Hence Europe is sometimes called the "*continent of development*."

America with its simplicity of structure, vast and fertile plains, is not intended to give birth to a new civilization, but to receive one already made. The free and easy communication between its parts tends to unity and strength, while differences of climate and resources give incentives and variety to industry; and with its plains inclined to the Old World, invites with open arms its culture and refinement, and affords them new fields of action and unrestrained expansion.

To each of the northern continents there seems to be a special mission given; viz., to civilize or develop its southern partner. Asia has its Australia, Europe its Africa, and North America its South America.

God has not only created the human race, but has preserved it and given it its rudimentary education in that *center of land masses*, and when its valleys became filled he led them out and showed them first narrow seas to cross to more fertile regions, then greater seas and greater difficulties to overcome to win greater prizes, until man has learned to subdue old ocean himself and to surmount the greatest continental barriers, and now calls upon the winds, lightnings, and the mightiest powers of land and sea to do him service.

The thought of all this is beautiful, and as Guyot says, "Truly no blind force gave our earth the forms so well adapted to perform these functions. The conclusion is irresistible that the entire globe is a great organism, every feature of which is the outgrowth of a definite plan of the All-wise Creator for the education of the human family, and the manifestation of his own glory."

EXAMINATIONS.

An examination paper should always be neatly and carefully prepared. For, however correctly the questions may be answered, a poor paper betrays a want of taste, order, and system; and in the eyes of many, disqualifies the applicant for the place of trust.

I have observed that as a rule that he who can prepare a neat examination paper either is or will make a good teacher.

A few rules and a model are given to assist the pupil in preparing papers of this kind.

1. Try to write neatly and see that no words are misspelled.
2. Do not forget to apply the rules of punctuation which you have learned, and if you have not learned any, see to it at once.
3. Every question should be so answered as to indicate what the question has been.
4. Number the answers as they are numbered on the question list, and leave, at least, the space of one line between the answers of each question.
5. Begin *every answer* on a new line, even if there are two or more answers required in the same question.
6. If you write with a pencil, see that it is well sharpened and then kept sharp.
7. Always rely on *yourself*. Never try to get a grade *dishonestly*.
8. Observe carefully the model on the next page, which is to guide you in the preparation of your papers.

A few questions are submitted and answered.

QUESTIONS.

1. What does astronomical geography include?
2. State the difference between Llanos and Selvas.
3. Define canon, glacier, firth.
4. Name the largest body of fresh water and the lowest body of salt water on the globe.
5. What is an absolute monarchy? Name one.

ANSWERS.

Examination of Harry Wilson in geography. Sept. 25th. 1883.

No.		Grade %
I.	<i>Astronomical geography</i> includes the consideration of the earth as a planet, of its form, sizes, motions, measurements, and modes of representing the surface by maps.	
II.	The <i>Llanos</i> are the vast grassy plains of Orinoco, while <i>Selvas</i> are the heavily wooded plains of valley of the Amazon.	
III.	A <i>canon</i> is a deep gorge between high and steep banks worn by water courses. A <i>Glacier</i> is a vast field or mass of ice and snow slowly moving down the valleys of a mountain. A <i>firth</i> is the wide open mouth of a river affected by the tides.	
IV.	The <i>largest</i> body of fresh water is Lake Superior. The <i>lowest</i> body of salt water is the Dead Sea.	
V.	An <i>absolute monarchy</i> is where the whole supreme power lies in the hands of one person. <i>Russia</i> is an absolute monarchy.	

ERRATA.

Several *textual errors* have crept into the pages of this book, in the course of printing and as I would lead no one astray they are noted here.

Page 62, last paragraph, *Russian* should read *Persian*.

Page 93, last line of 1st paragraph, read *Great Bear Lake* instead of *Lake Winnipeg*.

Page 109, *June 3rd* should read *July 2d*.

Page 133, *Minerals*--third sentence should read, coal and copper are wanting in Florida and Louisiana:..... coral is obtained, etc.

Page 25, last paragraph, and last line of 3rd sentence--read *to* instead of *or*.

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